

Service Manual

Mini Cassette



Stereo Radio Cassette Recoder

RQ-SX70F



Colour

(H)Gray Type

Area

GHHong Kong.

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AR10R Mechanism Series

Specifications

Radio

Frequency Range:

AM: 522-1629 kHz (9 kHz steps/Japan mode)

520-1710 kHz (10 kHz steps mode)

FM: 87.5-108.0 MHz (AM 9kHz/10kHz steps mode)

76.0-90.0 MHz (Japan mode) (100kHz steps)

TV: 1-12ch (Japan mode only)

Intermediate Frequency:

AM: 450 kHz, FM: 10.6 MHz

Sensitivity:

AM: 223.9μV/m/0.5mW output

FM: 3.2μV/0.5mW (-3dB Limit sense)

TV: 4.0μV/0.5mW (-3dB Limit sense)

Cassette Recorder

Track System: 4-track, 2 channel, stereo

Recording System: AC bias

Erasing System: DC erase

Monitor System: Variable sound monitor

Frequency Range

Playback (Normal/High/Metal): 40 ~ 18,000Hz

Recording (Normal): 70 ~ 10,000Hz

Motor: Electrical governor motor

Tape Speed: 4.8cm/s

General:

Input jack: MIC: 0.56mV(600 ohm)

Output Jack: PHONES; 30 ohm (stereo mini jack diameter 3.5)

Power Output: 4mW+4mW (RMS...max)

Power Requirement:

Rechargeable Battery: DC1.2V with an included Panasonic

Rechargeable Battery (RP-BP61SYS1)x1

Battery: DC 1.5V one "AA" size battery (not included)

(Panasonic R6, LR6 or equivalent not included)

AC: DC IN 1.5V with optional Panasonic AC adaptor RP-AC11

Dimensions: 108.8 (Wide) / 79.2 (High) / 21.3 (Depth) mm

Weight: 172g (with rechargeable battery)

Playing time:

(When used in hold mode, at 25 °C on a flat and stable surface.)

The play time may be shorter depending on the operating conditions.

Rechargeable battery: About 9h(Tape playback), About 10h(Radio reception), About 5h(Recording with mic.), About 4h(Recording from radio)

Panasonic Dry cell battery (R6): About 12h(Tape playback), About 12h(Radio reception), About 5h(Recording with mic.), About 3h(Recording from radio)

Panasonic Dry cell battery (R6) with rechargeable batteries: About 21h(Tape playback), About 22h(Radio reception), About 10h(Recording with mic.), About 7h(Recording from radio)

Panasonic Dry cell battery (LR6): About 28h(Tape playback), About 29h(Radio reception), About 15h(Recording with mic.), About 9h(Recording from radio)

Panasonic Dry cell battery (LR6) with rechargeable batteries: About 36h(Tape playback), About 38h(Radio reception), About 20h(Recording with mic.), About 13h(Recording from radio)

Recharging time: About 2 hours

Charger: (RP-BC155AEY) (included)

Input: AC230V, 50Hz, 4VA

Output: DC 340mA, 1.2V

Note: Design and specifications are subject to change without notice.

Weight and dimensions are approximate.

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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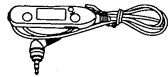
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Accessories

Stereo earphones.....1pc.
(RFEV316P-K1S)



Remote controller.....1pc.
(RFEV003PFK1C)



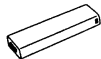
Stereo microphone.....1pc.
(RFEM301P)



DC-IN adaptor.....1pc.
(RFA0733-K)



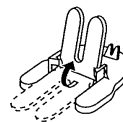
Rechargeable battery.....1pc.
(RP-BP61SYS1)



Carrying bag.....1pc.
(RFC0044-K)



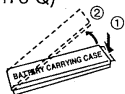
Mic Stand.....1pc.
(RFA0740-K)



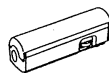
Charger.....1pc.
(RP-BC155AEY)



Rechargeable battery carrying case.....1pc.
(RFA0475-Q)

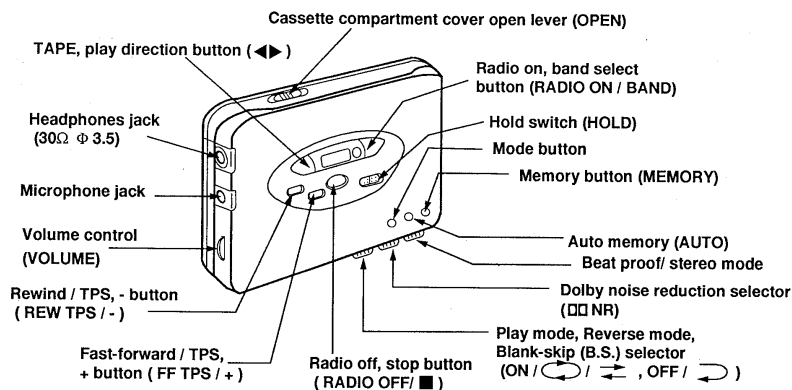


Dry cell battery case.....1pc.
(RFA0617-H)

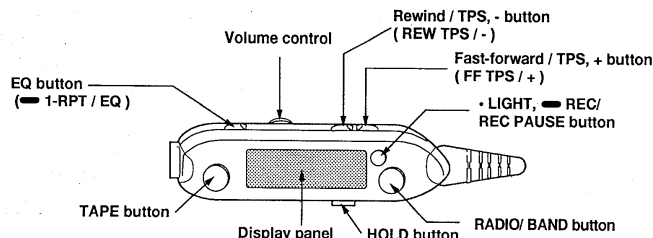


Location of Controls

• Main Unit



• Remote Controller



Power Sources

Rechargeable battery

For its initial use after purchasing or after a long time interval (more than three months), be sure to recharge the rechargeable battery.

Normally 2 hours recharging will give below in the chart (at 25°C).

Tape playback	Radio reception	Recording with mic.	Recording from radio
about 9 hours	about 10 hours	about 5 hours	about 4 hours

Install both types of battery (rechargeable and dry cell batteries) in the unit to extend the playback time.

Dry cell battery

AC adaptor (not included)

- The unit is in the standby condition when the AC adaptor is connected. The primary circuit is always "live" as long as the AC adaptor is connected to an electrical outlet.

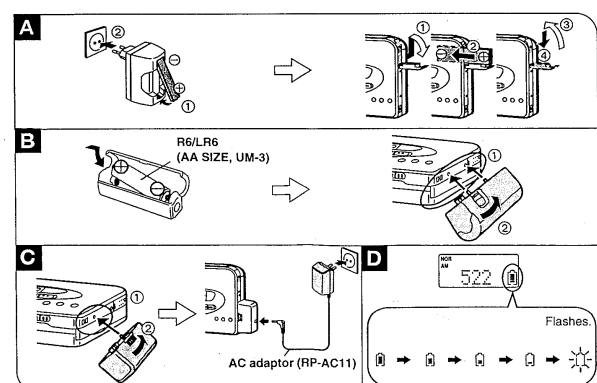
Battery condition indicator

Since flashing of the indication displayed on the remote controller tells the weak of the battery, recharge the rechargeable battery or replace the dry cell battery with new one.

The length of the time the unit can operate after flashing:

Rechargeable battery about 5 minutes

Dry cell battery (or used both types together) about 30 minutes



Memory Presetting

(Available only from the main unit)

Frequencies of up to 18 radio stations (9 each AM and FM) can be stored in the memory.

Preparation

- Release the hold state.
- Connect the earphones (the cord of the earphones acts as an FM antenna) when storing frequencies of FM stations in the memory.

Auto memory function

The frequencies of the each band are automatically stored in order from small to large numbers of the frequencies in the memory.

- Press RADIO/BAND to switch on the power.
- Press MODE to display "MEMO".
- Press and hold AUTO.

The confirmation beep sounds after the frequencies are stored.

Before Use

Connecting the stereo earphones and the remote controller

Illuminated remote controller

Pressing any button on the remote controller or the unit lights the display for approximately 5 seconds, enabling easy use even in dark areas.

To confirm the display of the remote controller without operating:

Pressing LIGHT lights the display for approximately 5 seconds even in the hold state.

- Noise may be heard when the display is lighted.

Concerning the hold function

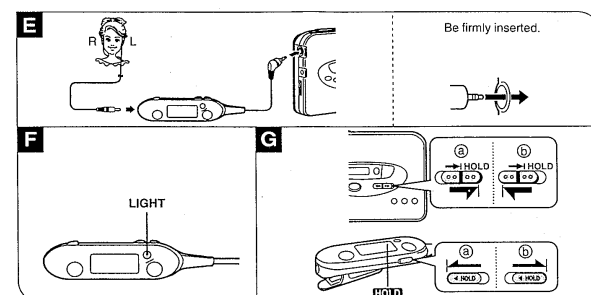
This function prevents the unit from operating even if one of the buttons is pressed in error.

- Both the main unit and remote controller have a HOLD switch, and each of them works individually.

- To hold
- To release

Concerning the remote controller operation

- Before using VOLUME, be sure to adjust the volume control on the main unit to "5-7" position.
- The operation tone "beep" sounds whenever the remote controller button is pressed. The confirmation tone sounds after the operation tone.
- The beep tones, which are emitted when TAPE is pressed, indicates that a cassette is not inserted.



When "E F F E" appears on the display:

Correct presetting may not be possible in cases where the broadcast waves are too strong or too weak. In such cases, carry out presetting manually. (See below.)

Manual memory function

- Press RADIO/BAND to switch on the power.
- Press MODE to display "MEMO".
- Press RADIO/BAND to select the band.
- Press and hold MEMORY to have broadcast frequency indicated (flashing).
- Press + or - to select the broadcast frequency.
- Press MEMORY to have "M" and memory number indicated (flashing).
- Press + or - to select the memory number to store the frequency.
- Press MEMORY.

■ To erase the unnecessary station from the memory

1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "MEMO".
3. Press RADIO/BAND to select the band.
4. Press + or - to select the memory number to remove.
5. Press and hold MEMORY to have broadcast frequency indicated (flashing).
6. Press both + and - to display "-----" (flashing).
7. Press MEMORY.

■ Listening to the Radio (H)

- 1 Release the hold state.
- 2 Press RADIO/BAND to switch on the power.
- 3 Press MODE to display "MEMO" (MEMO mode) or not (free mode).
MEMO mode: To listen to the preset station
Free mode: To listen to the desired station (not have been preset)
- 4 Press RADIO/BAND (main unit) or press and hold RADIO/BAND (remote controller) to select the band.
[Using the main unit]
Each press changes the indication between AM and FM.
[Using the remote controller]
Each press and hold changes the indication between AM and FM.
- 5 Press + or - to select the desired station.
Preset memory number (only on the main unit in MEMO mode) or broadcast frequency changes.
- 6 Adjust the volume.

To stop listening:

Press ■ (main unit) or RADIO/BAND (remote controller).

■ Automatic tuning (for free mode)

Press and hold + or - until the frequency displayed on the main unit begins to change. The changing will automatically stop if a broadcast frequency is located.

To stop automatic tuning, press + or - again.

■ To obtain good reception

When listening to AM broadcast: I

As the built-in ferrite antenna works, try various directions to catch optimum reception.

When listening to FM broadcast:

As the cord of the earphones acts as an antenna, use it as extended as possible, not coiled.

■ To select the stereo or monaural of the FM

(Available only from the main unit)

Set the stereo mode selector to ST or MONO.

When there is a noise during FM reception:

Set the stereo mode selector to MONO.

Though the sound becomes monaural, noise is reduced.

■ To convert the AM frequency step

(Available only from the main unit)

At the time of purchase, the AM band frequency changes by the step of 9 kHz. It can be converted from 9 to 10 kHz to receive radio stations in a different country or area, which cannot be tuned in with the 9 kHz step.

● Converting the frequency step erases the stations previously stored in the memory.

1. Press RADIO/BAND to switch on the power.
2. Press MODE for more than 5 seconds to display the step.
3. Press + or - to select the step.
Each press changes the indication among "U, AM10", "E, AM9" or "J".
"U, AM10": 10 kHz step.
For the use in North and South America or part of Southeast Asia.
"E, AM9": 9 kHz step.
For the use in Southeast Asia or Europe.
"J": 9 kHz step.
For the use in Japan.
4. Press and hold MEMORY to have AM broadcast frequency indicated.

To return to the previous frequency step:
Follow steps above.

Auto area bank function (only for Japan mode "J"):

Allows you to easily listen to previously stored stations in any of the 41 regions and JR (those JR Shinkansen lines equipped with on-board FM broadcasts).

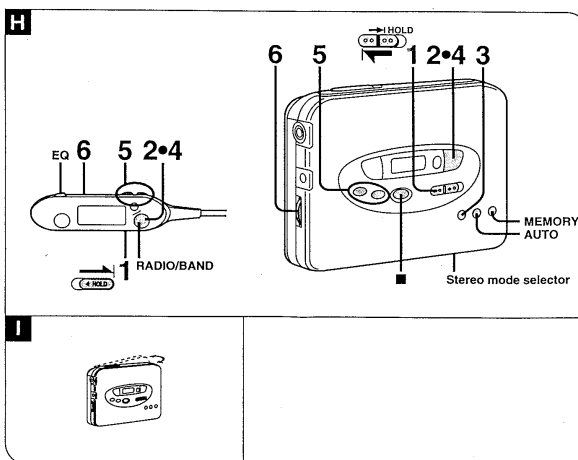
Auto area bank function automatically selects the area number according the region where you are.

1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "AREA".
3. Press and hold AUTO.

Changing the display mode of the remote controller (only for AREA mode):

Press and hold EQ.

Remote controller display shows the name of the station and the frequency alternately.



■ Cautions

- To avoid product damage, do not expose this product to rain, water or other liquids.
- If the set is not used for a long period of time or is used only from an AC power source, remove the battery to prevent potential damage due to possible battery leakage.
- Avoid using or placing this unit near sources of heat. Do not leave it in an automobile exposed to direct sunlight for a long period of time with the doors and windows closed, as this may deform the cabinet.
- When not in use, disconnect the AC adaptor from the AC power outlet.

Precautions for Listening with the Headphones or Earphones

- Do not play your headphones or earphones at a high volume. Hearing experts advise against continuous extended play.
- If you experience a ringing in your ears, reduce volume or discontinue use.
- Do not use while operating a motorized vehicle. It may create a traffic hazard and is illegal in many areas.
- You should use extreme caution or temporarily discontinue use in potentially hazardous situations.
- Even if your headphones or earphones is an open-air type designed to let you hear outside sounds, don't turn up the volume so high that you can't hear what's around you.

Rechargeable battery and charger

- Use only the included charger when recharging.
- During recharging, it is normal for the charger and the rechargeable battery to become slightly warm.
- Do not leave the charger turned on for more than 12 hours at one time, otherwise, the rechargeable battery life may be shortened.
- Avoid recharging or placing the rechargeable battery near sources of heat or humidity.
- The included rechargeable battery can be recharged about 300 times. After that, its operation time becomes shortened. That's time for replacing the rechargeable battery.

Dry cell battery and rechargeable battery

- Load new battery with their polarities (+ and -) aligned correctly.
 - Do not apply heat to batteries, or internal shortcircuit may occur.
 - If this unit is not to be used for a long period of time, remove the batteries and store them in a cool and dry place.
 - Remove spent batteries immediately.
- Do not peel of the plastic covering on the rechargeable battery. Short-circuiting may result which is dangerous.

Carrying batteries around

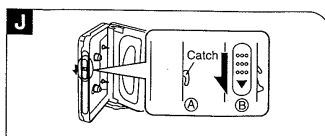
When putting dry batteries and rechargeable batteries in a pocket or bag ensure that no other metal objects such as a necklace are placed together with them. Contact with metal may cause short-circuiting which, in turn, may cause a fire. The same caution needs to be heeded with the battery case containing a dry battery. When carrying the rechargeable battery around, be absolutely sure to place it inside the included rechargeable battery case.

Cassette tapes exceeding 100 minutes

These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the deck mechanism.

Endless tapes

Failure to operate these tapes correctly may cause the tape to wind around the revolving parts. For this unit, it is recommended to use the tape which is appropriate to the auto reverse mechanism.



Cassette compartment cover J

If the catch is in the position shown in the figure (A), the cassette compartment cover won't close. The compartment cover may be bent out of shape if an attempt is made to forcibly close the cover. If this occurs, slide OPEN so that the catch is in the position shown in the figure (B).

■ Listening to Tape (K)

This unit is equipped with an auto tape select function, so you can use normal, high or metal position types of tape.

1 Insert a cassette tape.

Closing the cover, the tape slack will be wound automatically and playback will be expected to start from the forward side.

- Ⓐ Forward side
- Ⓑ Reverse side

2 Release the hold state.

3 Press TAPE.

4 Adjust the volume.

To stop playback:

Press ■ (main unit) or TAPE (remote controller).

■ To change the tape direction

Press TAPE (main unit) or press and hold TAPE (remote controller) during playback.

F ►: Forward side

◀ R: Reverse side

■ To fast forward or rewind

Press FF (fast forward) or REW (rewind) in the stop mode.

■ To find the beginning of a song (TPS: Tape Program Sensor)

You can skip as many songs as the number of times (up to 9) the button is pressed.

Press FF or REW during playback.

FF: You can skip forward (FF TPS).

REW: You can skip backward (REW TPS).

■ To change the play mode

Select the position of the play mode selector.

ON/↻: Both sides of the cassette are played continuously.

BLANK-SKIP works.

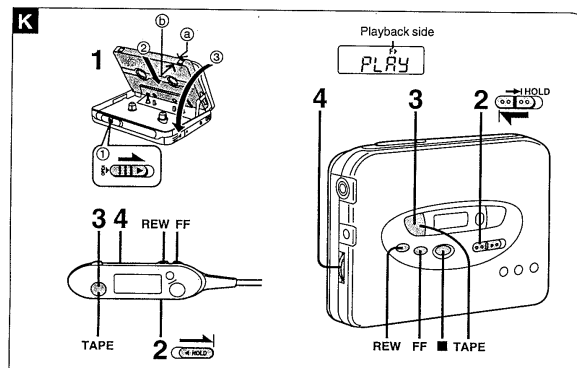
OFF/↻: The forward and reverse sides of the cassette are played once and then the playback stops.

BLANK-SKIP does not work.

BLANK-SKIP (B.S.):

When a silent part of more than 13 seconds is detected during playback, fast-forwarding automatically starts and then playback of the opposite side of the cassette starts from the beginning.

- When playback is started at the point close to the end of the last song, it may not work properly.
- When small sound continues for more than 13 seconds, the unit may start fast-forwarding. When you listen to a classical music, set the selector to OFF/↻ to release BLANK-SKIP.



L To listen to the tape recorded with Dolby B NR

Set **NR** (P. B.) to ON.

M To repeat a current song (ONE-REPEAT)

(Available only from the remote controller)
Press and hold EQ during playback.

To cancel ONE-REPEAT:

Press and hold EQ once more.

ONE-REPEAT is also cancelled when tape operations are switched.

N To search a song on the cassette (INTRO-SCAN)

(Available only from the remote controller)
Allows you to listen to the beginning portion (intro) of the songs for about 10 seconds each, in order.

Press and hold FF or REW in the stop mode.

FF: Fast forward starts.

REW: Rewind starts.

When you could find your desired song:

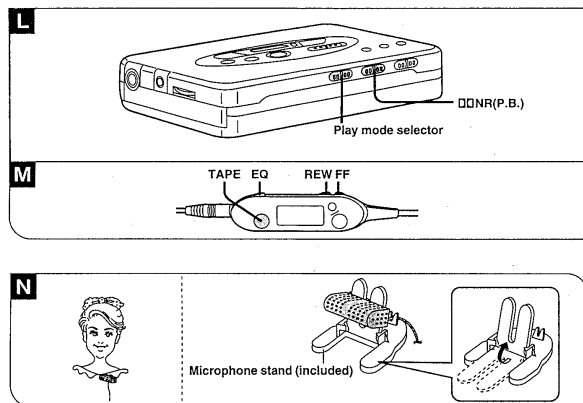
Press TAPE. Normal playback is started.

Notes

Since making use of the silent part between songs, TPS, ONE-REPEAT and INTRO-SCAN may fail to function properly in the following situations:

- When the silent part between songs is less than 4 seconds or has noise.
- When the next silent part is less than 10 seconds away.
- When there is a long silent part or particularly low or small sound in the song.

During TPS or INTRO-SCAN, the unit automatically reverses when the end of the cassette tape is reached and operation continues. However, if the end of a cassette tape is detected three times, the tape automatically stops.



Before Recording

- Only normal position tapes can be used.
The sound may not be recorded properly if high and metal position tapes are used with this unit.
- Use a tape with the erase-prevention tabs.
- The recording level is automatically adjusted.
- Any change made to the volume or EQ effect during recording will not affect the recording.
- You cannot make a recording with Dolby noise reduction system.
- The following buttons cannot operate during recording to prevent error.
TAPE (only the main unit), MODE, AUTO, MEMORY, REW, FF, and RADIO/BAND

Concerning the stereo microphone (included)

- Do not connect or disconnect the stereo microphone during recording, as noise may be recorded or the volume of the recording may be reduced.
- Do not bring the stereo microphone close to the stereo earphones.
When howling occurs, move stereo earphones away from the stereo microphone or adjust the volume control of the unit.

How to use the stereo microphone and the microphone stand conveniently

If you adjust the microphone stand repeatedly, it may break.

Recording from Stereo Microphone (O)

1 Insert a cassette tape.

Closing the cover, the tape slack will be wound automatically and recording will be expected to start from the forward side.

- (a) Forward side
- (b) Rewind side

2 Release the hold state.

3 Set the reverse mode selector for desired setting.

- : For recording on the forward and then the reverse side.
- ↔: For recording on only one side.

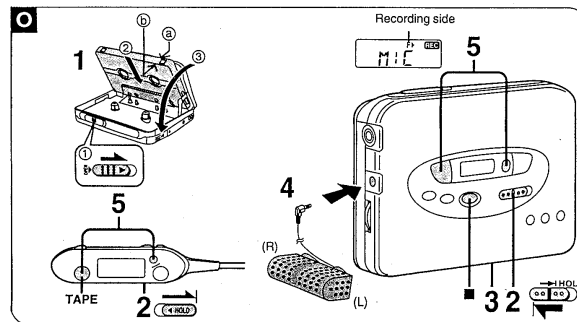
4 Connect the included stereo microphone.

5 Press TAPE while pressing REC/REC PAUSE.

Recording starts.

To stop recording:

Press **■** (main unit) or TAPE (remote controller).
Power is also switched off.



■ Recording from Radio

1. Tune in the desired broadcast station.
(Refer to "Listening to the Radio".)
2. Follow steps 1, 3 and 5 of "Recording from Stereo Microphone".

To stop recording:

Press ■ (main unit) or TAPE (remote controller).

To switch off the power:

Press ■ (main unit) or RADIO/BAND (remote controller) after stop of recording.

■ When there is too much interference during AM recording

Set the beat proof selector (3 steps) to whichever yields less noise.

■ To temporarily stop recording

Press REC/REC PAUSE (main unit), or press and hold REC/REC PAUSE (remote controller) during recording.

To resume recording, do the same as above.

■ To listen the sound being recorded (Monitoring)

You can monitor the sound through the stereo earphones.

The volume adjustment can be done using the volume control.

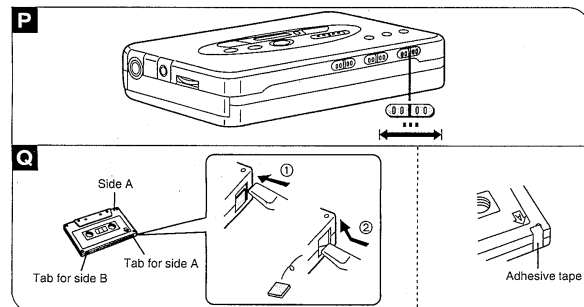
■ To erase recorded sounds

1. Disconnect the stereo microphone.
2. Follow steps 1–3, 5 of "Recording from Stereo Microphone".

■ To prevent erasure of recorded sounds

Break off the erase-prevention tabs with a screwdriver or a similar object and remove them.

To re-record on a protected cassette, cover the slot with adhesive tape.



■ To Change the Tone (R)

(Available only from the remote controller)

Every time you press EQ, the EQ effect will change as follows in turn.

NOR:

The EQ effect is cancelled. Normal sound is heard.

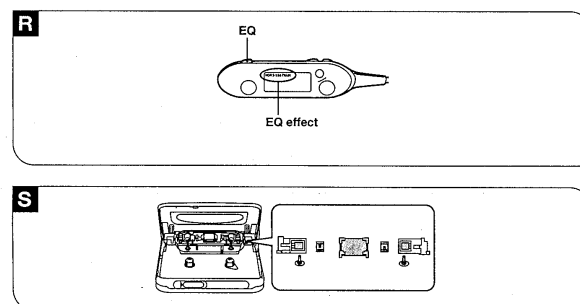
S-XBS:

Boosts the low frequency range.

- If the sound distortion occurs, turn down the volume.

TRAIN:

Gives a more natural quality to the sound and reduces strain and fatigue when you listen for a long time. It also cuts down the audible level of sound which disturbs people around you.



■ Maintenance

Head care S

To ensure good sound quality for tape operation, be sure to clean the head after approximately every 10 hours of use.

Clean the portions which contact the tape (the shaded portions in the figure) with a cotton swab dampened with a little alcohol.

Do not bring metal articles or magnetic material, such as a screwdriver, near the head assembly.

Main unit

Clean it with a cloth, dampened in a mild solution of soap and water.

Do not clean the cabinet with benzine or thinner.

Avoid excessive moisture.

Avoid spray aerosol type cleaner. Some cleaners contain corrosive chemicals that may cause internal damage and cabinet deformation.

Earphones and remote controller plugs

If sound is punctuated by breaks or noise is heard when earphones and remote controller plugs are rotated, wipe away dirt on plug.

■ Service Mode

This unit and its remote controller have a service mode which can be used to locate errors and faults (the remote controller and stereo earphones are detachable). Refer to this document to provide service and repairs.


Quick reference for service mode errors

The following table shows error identification criteria:

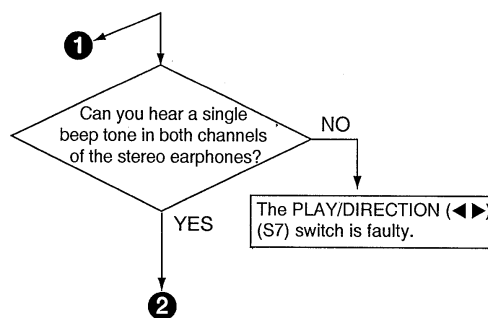
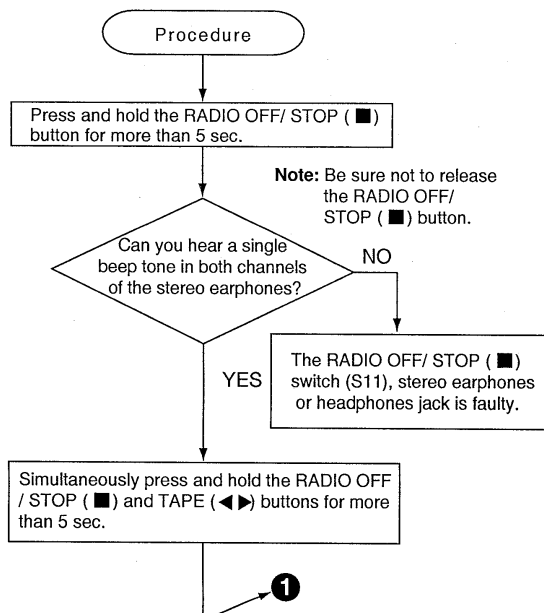
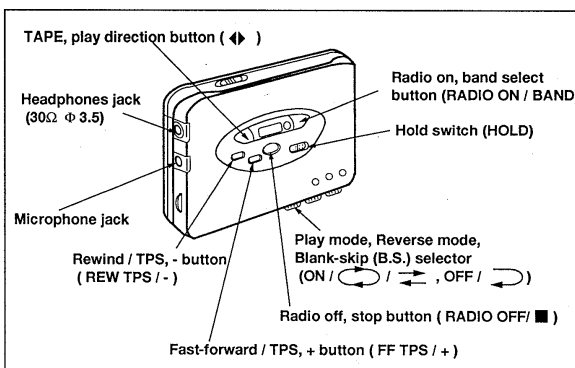
Service mode		Component	Judgment criteria			
(1)	Unit and stereo earphones test	Unit	OK	OK	NG	NG
		Stereo earphones	OK	NG	OK	NG
		Location of fault	No faults	Stereo earphones	Unit	Unit and stereo earphones
(2)	Remote controller and stereo earphones test	Remote controller	OK	OK	NG	NG
		Stereo earphones	OK	NG	OK	NG
		Location of fault	No faults	Remote controller	Unit	Remote controller and stereo earphones

(1) Checking the unit and stereo earphones

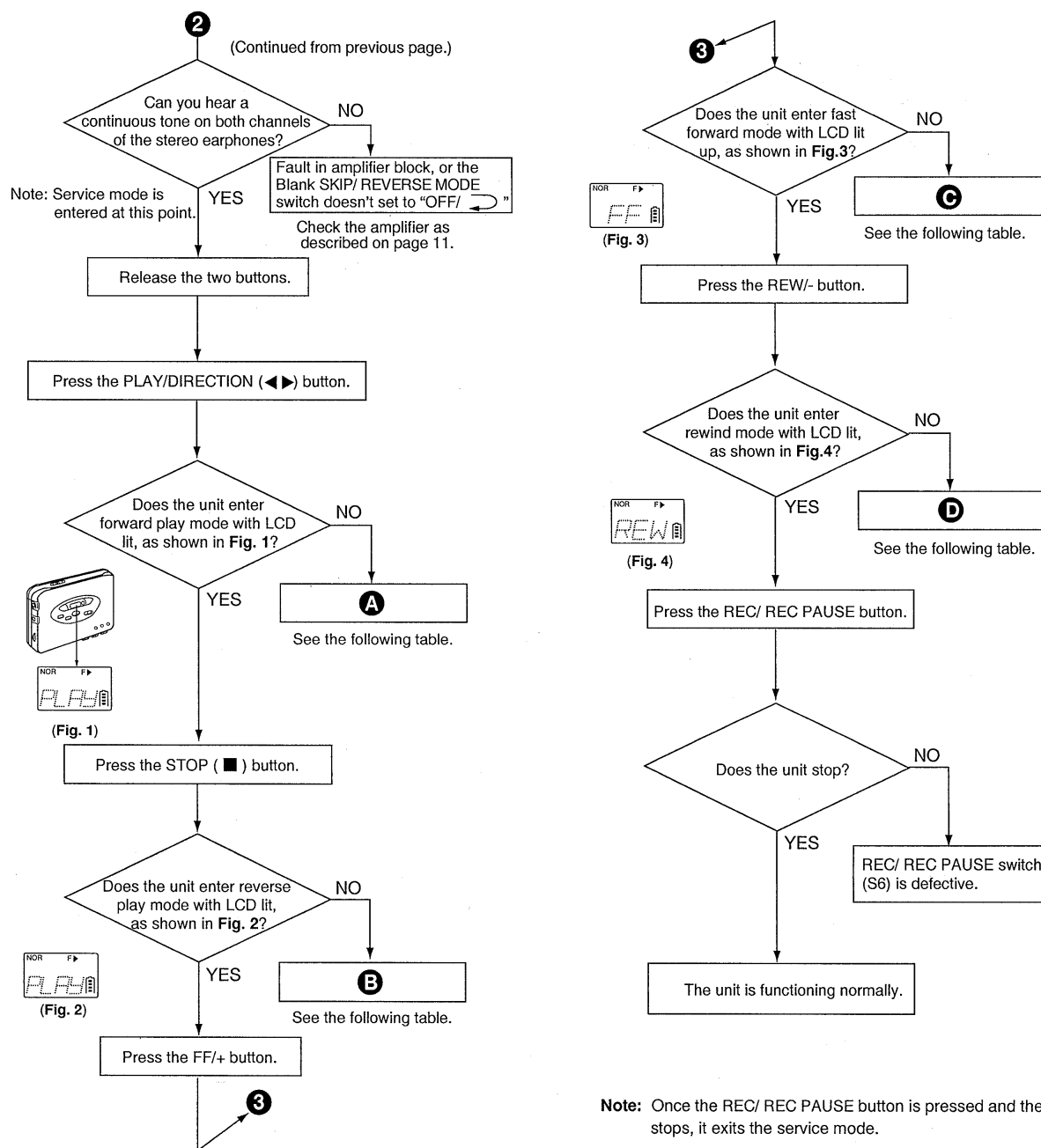
Preparations:

1. Firmly plug the stereo earphones into the headphones jack.
2. Install fully-charged rechargeable or R6/ LR6 dry cell batteries into the battery compartment.
3. Load a music tape into the unit and close the cassette compartment lid.
4. Make sure the HOLD button on the unit is off.
5. Set the Stereo Mode, Blank Skip/Reverse Mode switch to "OFF/ ".

• Location of controls and connections on the unit



(Continued on the next page.)



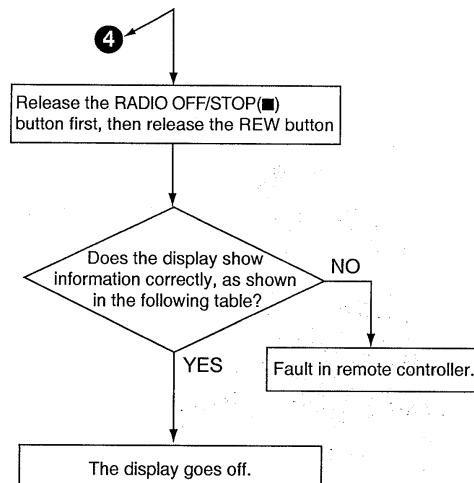
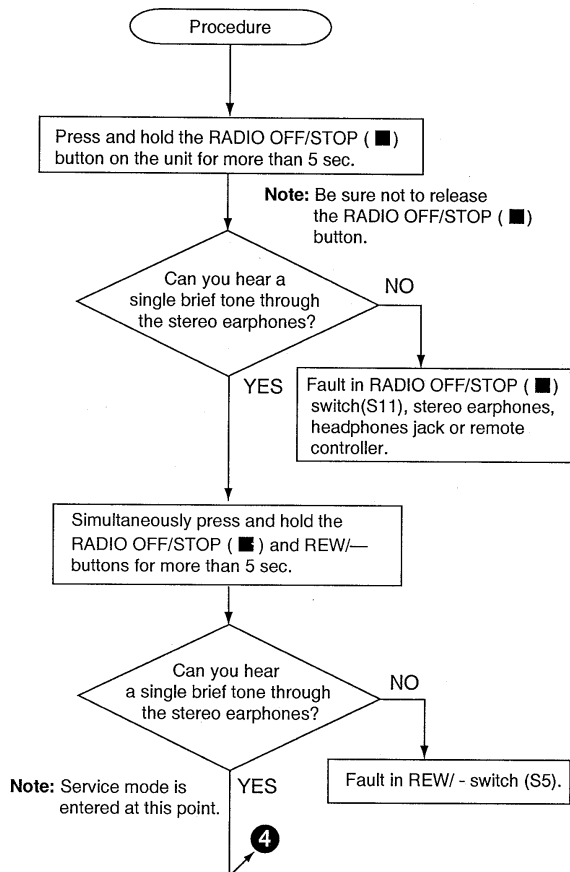
• Troubleshooting

Location of fault	Symptom	Faulty component
A	The unit fails to enter play mode or change the direction of play when the TAPE (◀▶) button is pressed.	Fault in S7(PLAY/ DIRECTION), S11(RADIO OFF/ STOP) or motor.
B		
C	The unit fails to enter fast forward mode when the FF/+ button is pressed.	Fault in S8(FF/+).
D	The unit fails to enter rewind mode when the REW/- button is pressed.	Fault in S5(REW/ -).

(2) Checking the remote controller and stereo earphones

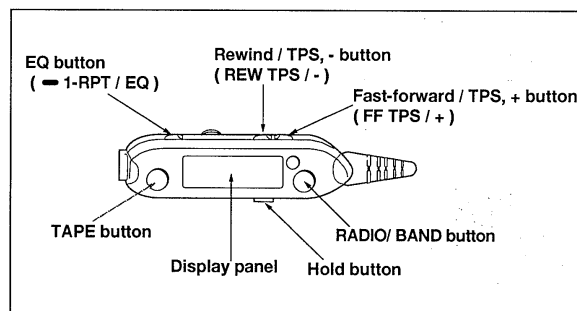
Preparations:

1. Firmly plug the remote controller into the headphones jack.
2. Firmly plug the stereo earphones into the remote controller.
3. Install fully-charged rechargeable or R6/ LR6 dry cell batteries into the battery compartment.
4. Make sure the HOLD buttons on the unit and remote controller are off.



Note: The remote controller will continue to display the information last called up in service mode. Once the batteries are removed from the unit, it exits the service mode.

• Location of controls and connections on the remote controller



• Procedure for testing the remote controller

Remote controller operation	Enter the service mode.	Pressd TAPE button.	Press FF button.	Press REW button.	Press RADIO button.	Press ■ (OFF) button of the unit.	Press ASC EQ button.
Normal information display							
	"PLAY" Scrolls from the left to the right on the display panel.	"FF" is displayed on the display panel.	"REW" is displayed on the display panel.	"S22" is displayed on the display panel.	"PLAY" Scrolls from the left to the right on the display panel.	"MC" is displayed on the display panel..	The display panel glows blue and "OFF" is display for about 4 sec.

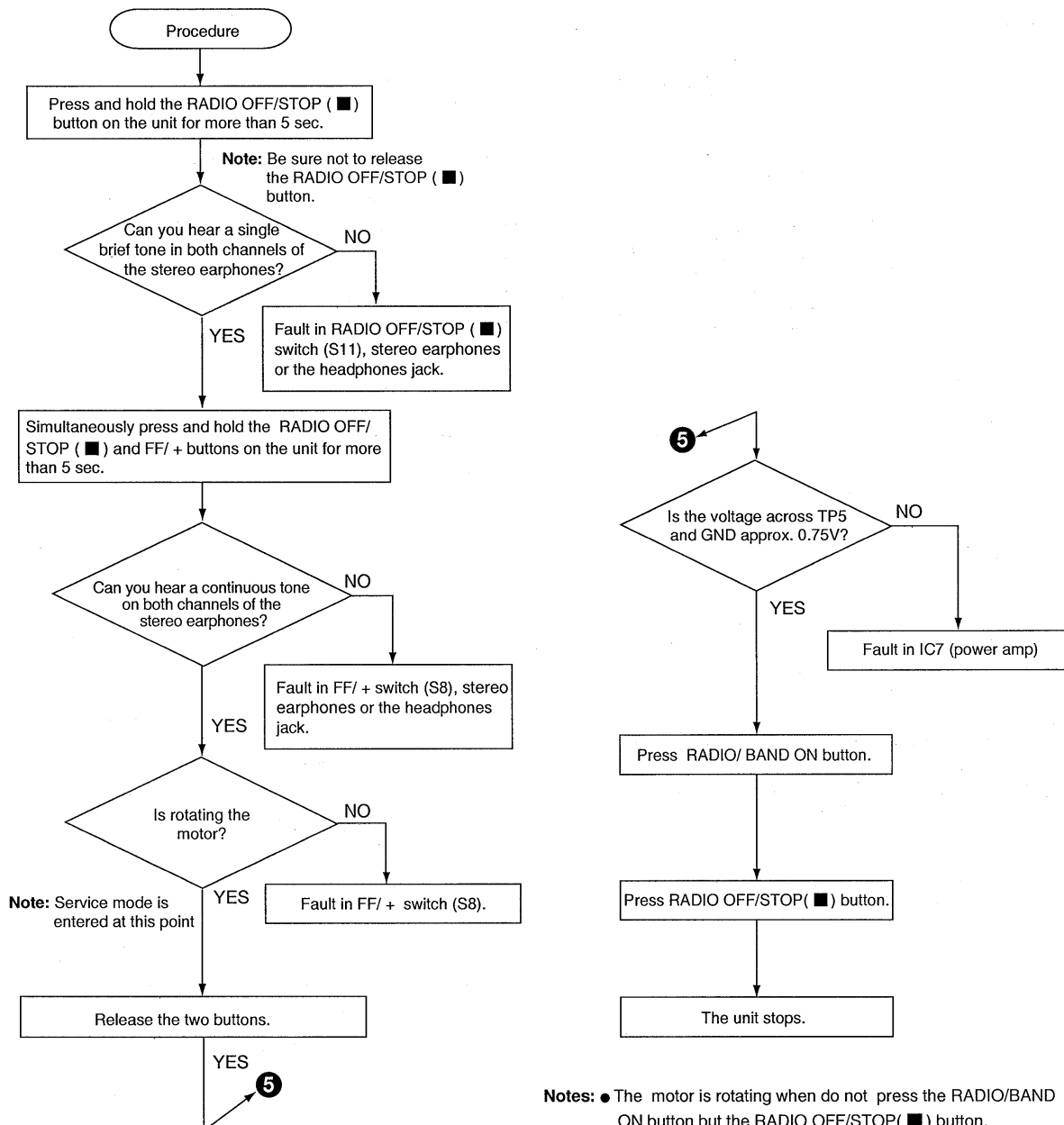
- The indication displayed on the remote controller tells the weak of battery. It's not necessarily that flashing all.
- The remote controller is functioning normally if it displays information as shown in the table above.

(3) Checking the amplifier block

The following procedure is only necessary if a fault in the amplifier block was detected during testing of the unit or stereo earphones.

Preparations:

1. Make sure the HOLD button on the unit is off.
2. Follow the steps described in Step 9 of checking for the main P.C.B. on page 14.
3. Firmly plug the stereo earphones into the headphones jack.



- Notes:**
- The motor is rotating when do not press the RADIO/BAND ON button but the RADIO OFF/STOP (■) button.
 - Push the RADIO/BAND ON button after the motor stopped.
 - In service mode, the unit stays in fast forward mode until the RADIO OFF/STOP (■) button is pressed, at which time the unit exits service mode.

■ Mechanism Block Replacement Procedure

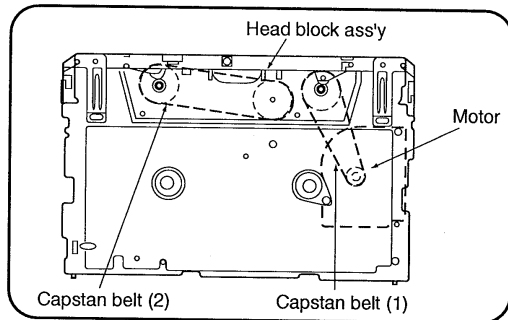
• Mechanism block replacement

Repair parts are supplied in the form of a mechanism block ass'y, from which the head block, motor, and capstan belts (1) and (2) are removed.

Before replacing the mechanism block, perform the following steps :

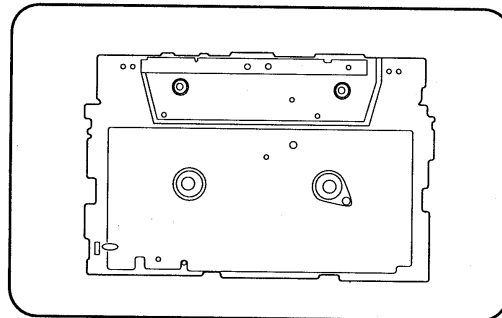
Preparations

Remove the head block, motor, and capstan belts (1) and (2) from the unit, and install them in the mechanism block ass'y (for disassembly, refer to Operation Checks and Main Component Replacement Procedure).



Mechanism block

Fig.1



Mechanism block ass'y

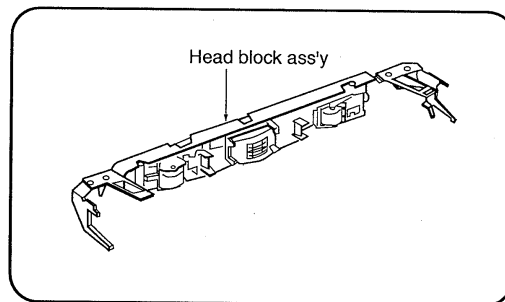
Fig.2

※ No adjustment is needed after replacement.

• Head block replacement

Repair parts are supplied in the form of a complete head block ass'y, which includes the head, head arm spring, and pinch roller arms (F) and (R) . The head arm spring and pinch roller arms can also be supplied separately on request.

※ No head azimuth adjustment is needed.



Head block ass'y

Fig.3

■ Operation Checks and Main Component Replacement Procedures

NOTE

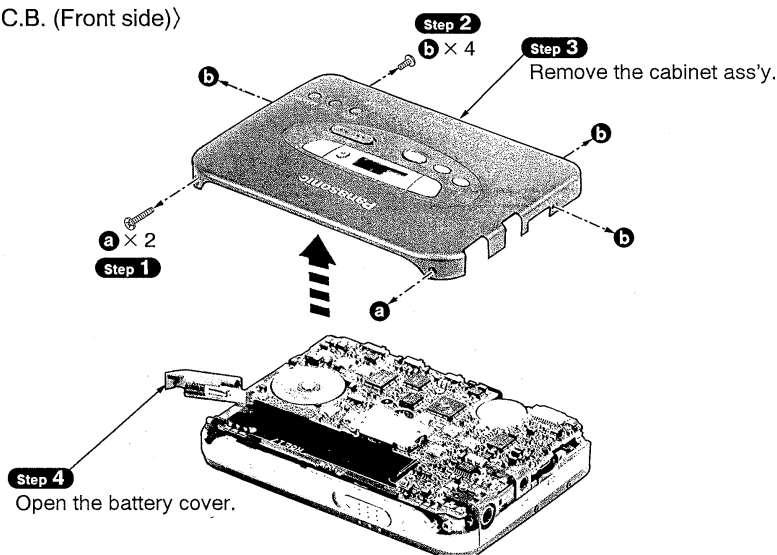
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
3. Illustrated screws are equivalent to actual size.
4. [] indicates parts No.

• Contents

	Page.
1. Checking for the main P.C.B.	13~15.
2. Replacement for the motor and capstan belt.	15,16.
3. Replacement for the intermediate ornament (A), intermediate ornament (B), intermediate ornament (C) and open knob ass'y.	16,17.
4. Replacement for the head block ass'y.	17,18.

1. Checking for the main P.C.B.

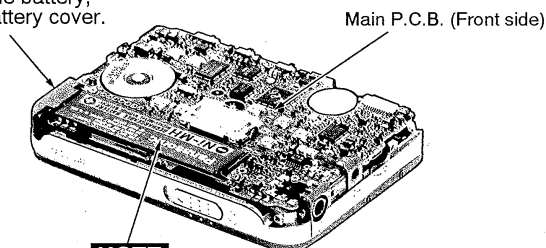
〈Checking the main P.C.B. (Front side)〉



• Check the main P.C.B. (Front side) as shown below.

Step 5

Store the rechargeable battery, and then close the battery cover.



NOTE

The rechargeable battery should be recharged fully.

a $\phi 1.4 \times 6\text{mm}$

[RHQ0068-K]


b $\phi 1.4 \times 3.5\text{mm}$

[RHQ0059-K]

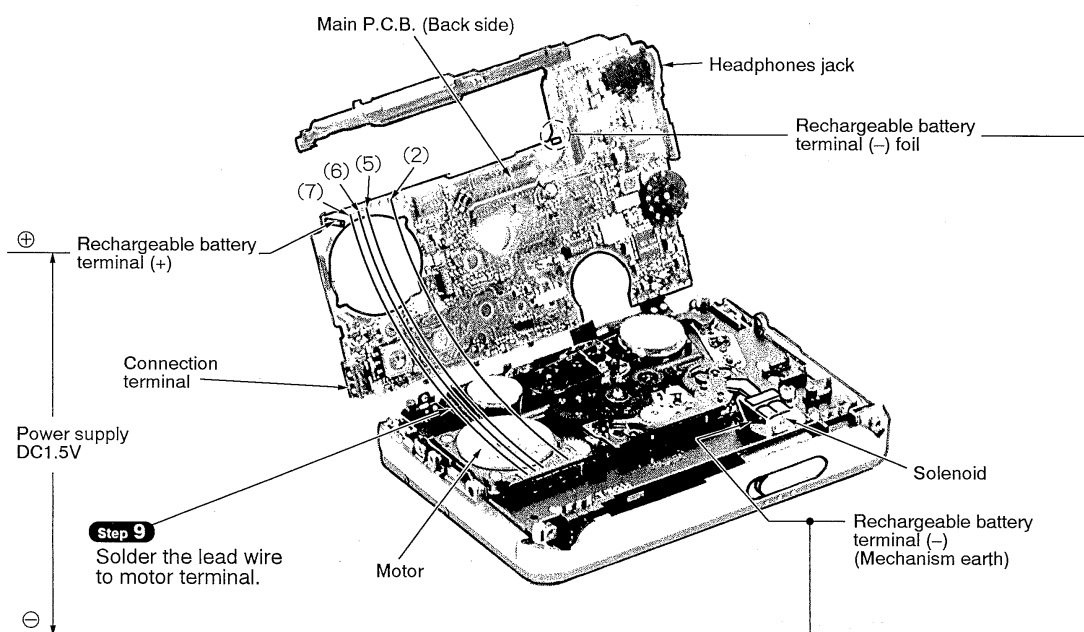
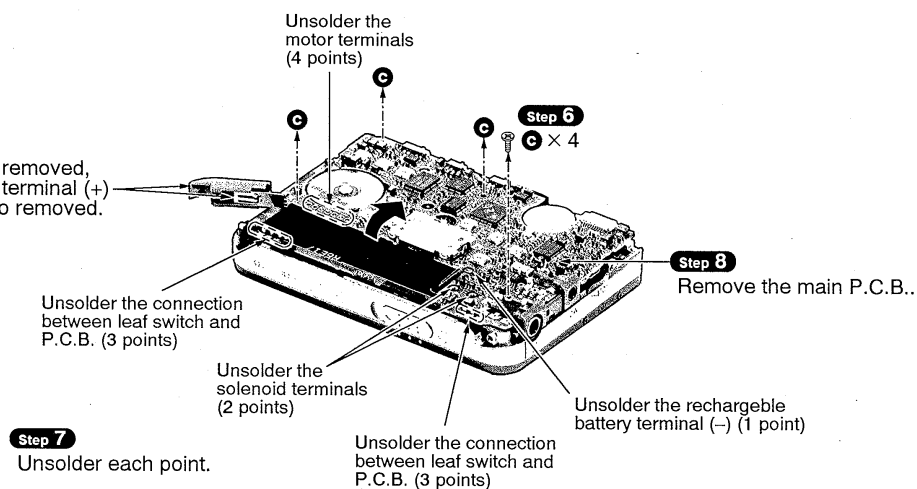
〈Removal for checking the main P.C.B. (Back side)〉

NOTE

When the main P.C.B. is removed, the rechargeable battery terminal (+) and battery cover will also be removed.

 $\phi 1.4 \times 3\text{mm}$

[RHQ0060-N]

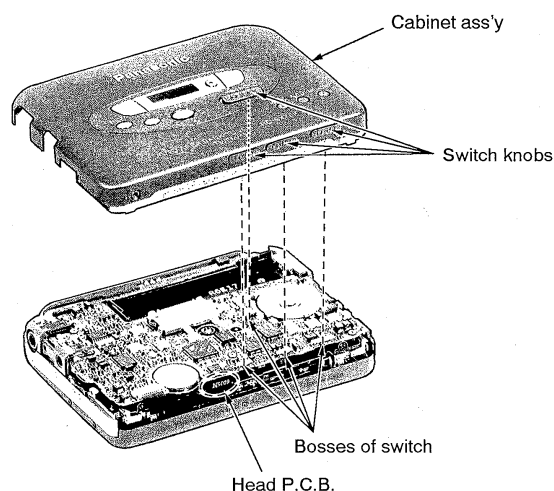


Operation Checks

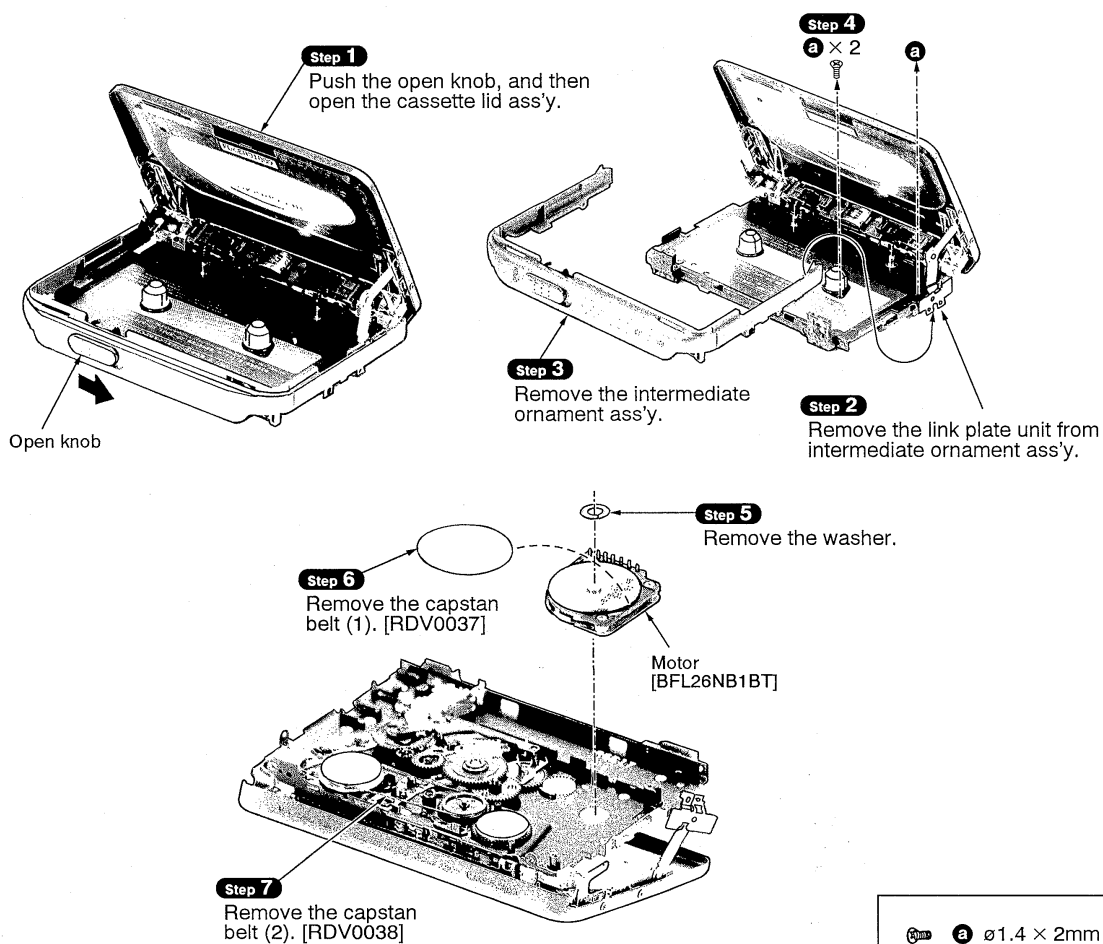
Confirm that the beeper sounds once by headphones when depressing the RADIO OFF/STOP (■) button more than 5 sec. under above condition, and then depress the RADIO OFF/STOP (■) and FWD (FF) buttons at same time more than 5 sec.. Keep the finger away from those buttons after that, so the FF mode will be operated. For more information about mode setting, refer to “(3) Checking the amplifier block” of service mode on page 11.

Notice for installing the cabinet ass'y

1. Make sure the bosses of switch are fit in the switch knobs when assembling.
2. Take care not to put the head P.C.B. between the cabinet ass'y.

**2. Replacement for the motor and capstan belt**

• Follow **Step 1** ~ **Step 4** , **Step 6** ~ **Step 8** in item 1 on pages 13 and 14.

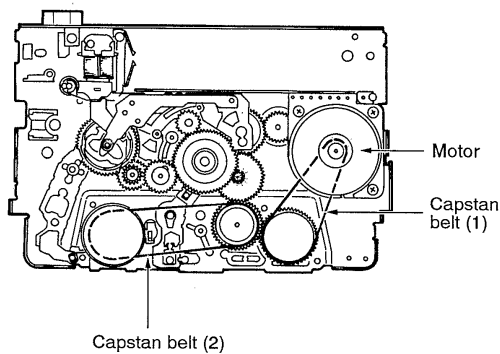
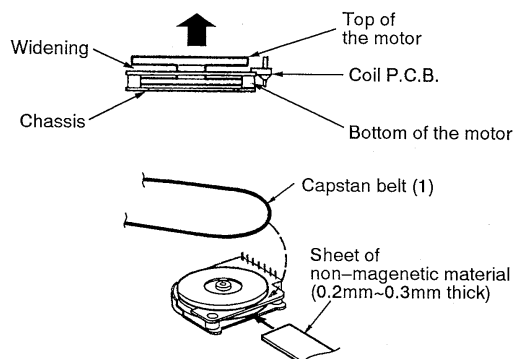


⌀1.4 × 2mm

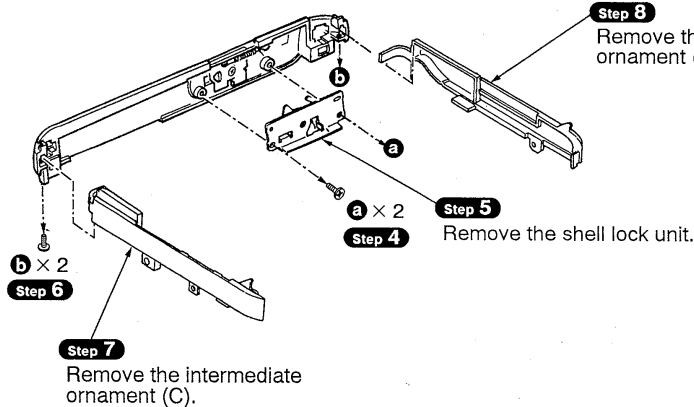
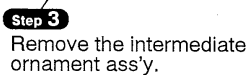
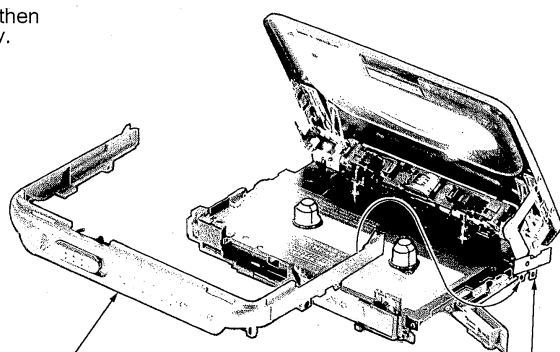
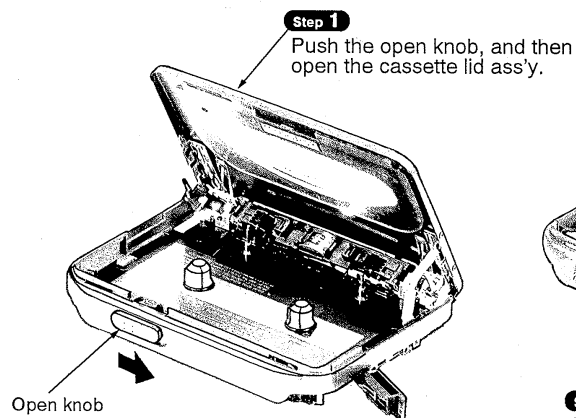
[XQS14+A2FZ]

Installing the capstan belt (1)

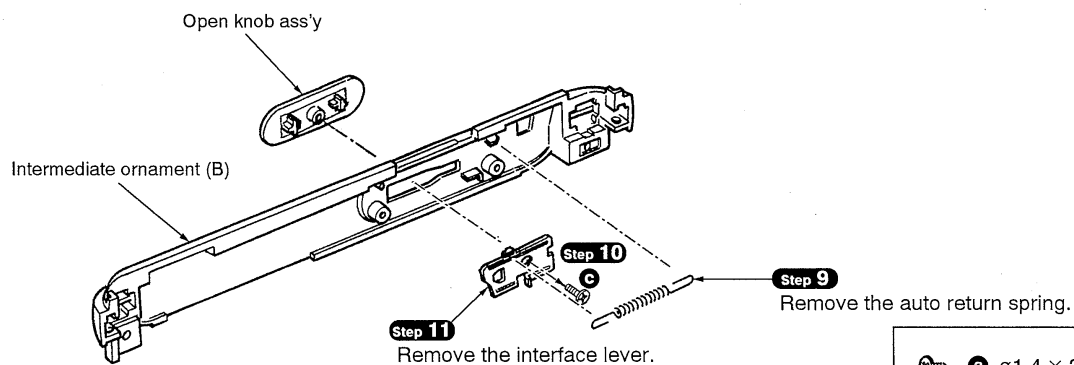
- When install the capstan belt (1) to motor, push up the motor by insert the non-magnetic material sheet between bottom of the motor and the chassis, and install the capstan belt (1) between top of the motor and the coil P.C.B..

**3. Replacement for the intermediate ornament (A), intermediate ornament (B), intermediate ornament (C) and open knob ass'y**

- Follow **Step 1** ~ **Step 4** in item 1 on page 13.



- a $\phi 1.4 \times 3\text{mm}$
[RHE5119YA]
 b $\phi 1.4 \times 4\text{mm}$
[XQN14+BG4FZ]

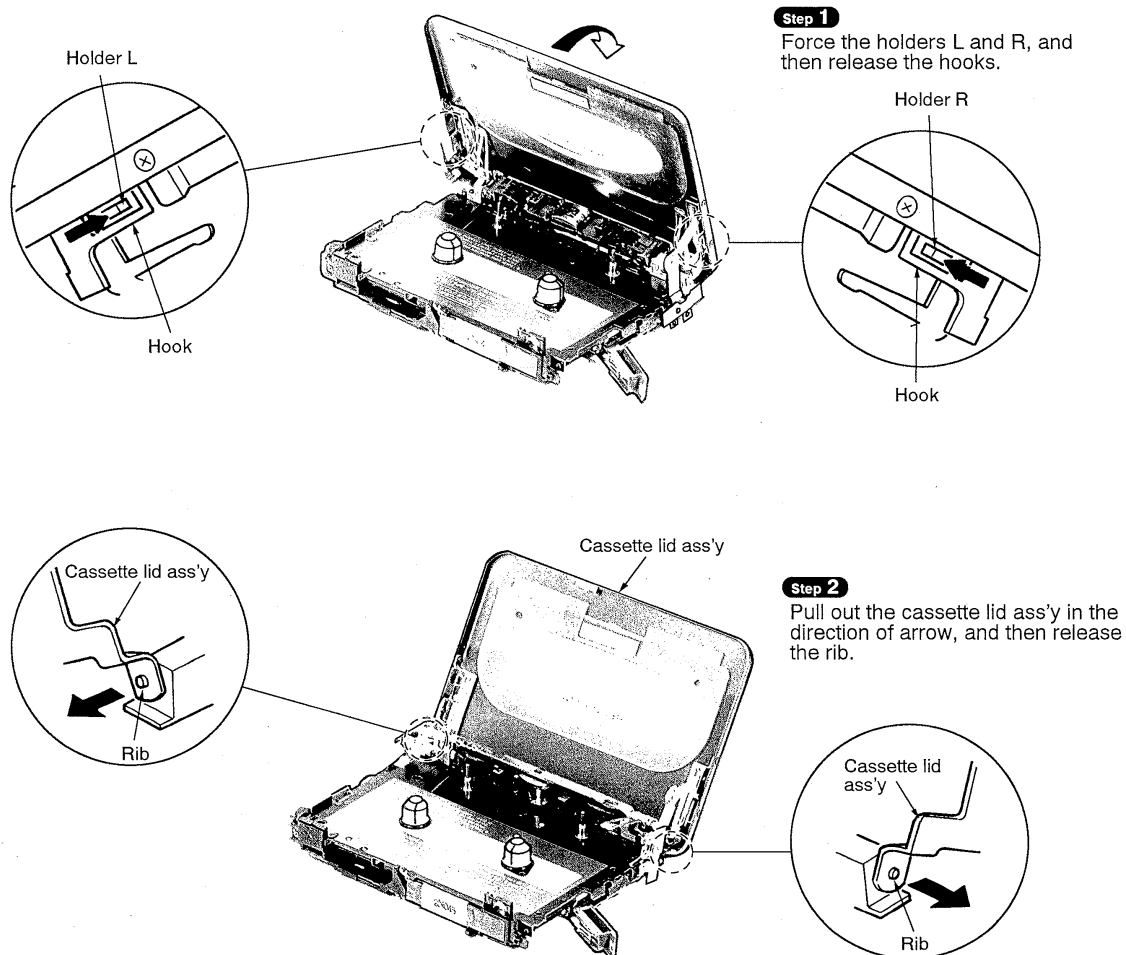


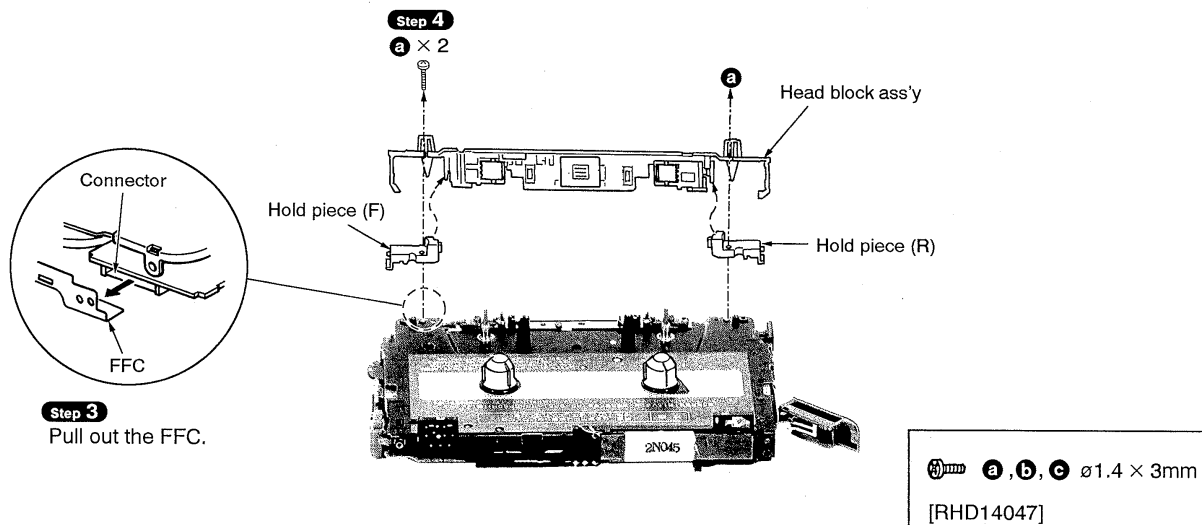
⌀1.4 × 2mm

[RHQ0032-K]

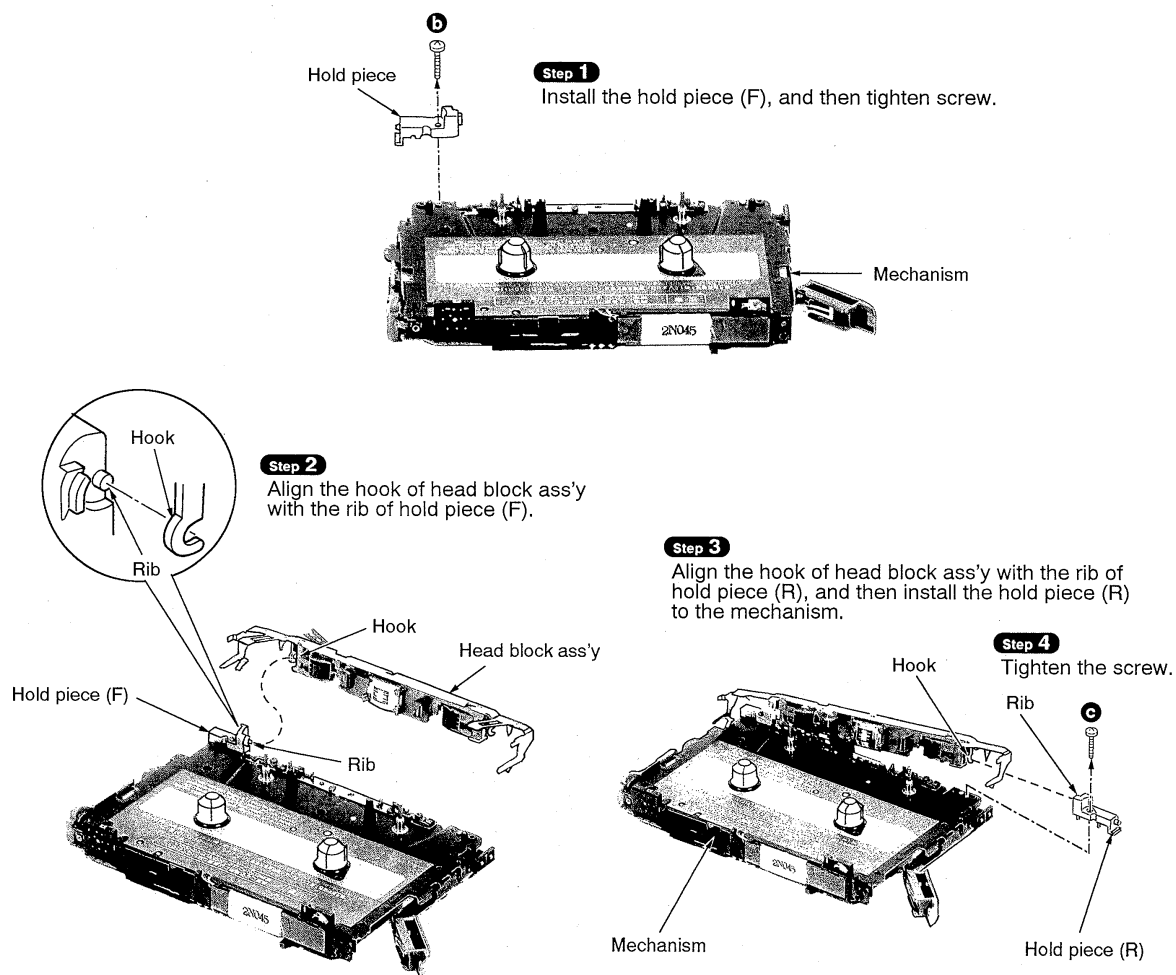
4. Replacement for the head block ass'y

- Follow **Step 1** ~ **Step 4** in item 1 on page 13.
- Follow **Step 1** ~ **Step 3** in item 3 on page 16.





Assembly procedures for head block ass'y after replacement



Mesurements and Adjustments

• Preparation for Adjustment

Follow "step 1~ step 5" in item on page 13.

• Measurement Condition

- | | |
|---|---|
| 1. Set volume control to maximum. | 4. Release the hold state. |
| 2. Set Dolby NR switch to OFF. | 5. Set power source voltage to 1.5V DC. |
| 3. Set RADIO/BAND switch to ON (FM stereo, AM/FM/TV RF adjustment). | |

• Measuring Instruments and Special Tools

- | | |
|----------------------------------|----------------------|
| 1. Signal generator (AM, FM, TV) | 3. Frequency counter |
| 2. Oscilloscope | |

• Radio Section

• AM / FM / TV RF Adjustment

Band	Signal Generator		Display Setting	Indicator (Oscilloscope)	Adjustment Point	Remarks
	Connection	Frequency				
AM	Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	594kHz	594kHz	Headphones jack (30Ω) (Refer to Fig.2)	L11 (Refer to Fig. 3)	Adjust L11 for maximum output.
FM	TP131 or TP231 ... (+) TP132 or TP232 ... (-) (Refer to Fig. 1)	90MHz	90MHz	Headphones jack (30Ω) (Refer to Fig.2)	CT1 (Refer to Fig. 3)	Adjust CT1 for maximum output.
TV	TP131 or TP231 ... (+) TP132 or TP232 ... (-) (Refer to Fig. 1)	197.75MHz (8ch)	8ch	Headphones jack (30Ω) (Refer to Fig.2)	CT2 (Refer to Fig. 3)	Adjust CT2 for maximum output.

• FM Stereo Adjustment

Item	Input	Output	Adjustment Point	Procedure
FM Stereo adjustment	76MHz, 66dB TP131 or TP231 ... (+) TP132 or TP232 ... (-) (Refer to Fig. 1)	TP118 or TP218 ... (+) TP132 or TP232 ... (-) (Connect a 220kΩ~330kΩ resistor between the test points TP118 or TP218 and TP132 or TP232 .) (Refer to Fig. 1)	VR3 (Refer to Fig. 2)	1. Set STEREO MODE switch to ST. 2. Adjust VR3 for 19 kHz ± 50 Hz reading on frequency counter.

• Tape Section

Item	Test Tape	Measurement Point	Adjustment Point	Procedure
Tape speed adjustment	QZZCWAT (3kHz, -10dB)	Connect the frequency counter to Headphones jack (30Ω) (Refer to Fig.1)	VR2 (Refer to Fig. 3)	Playback the central part of the tape and adjust VR2 so that the tape speed is as follows. Forward: 3020±20Hz Reverse: 2970~3080Hz Make sure that the frequency range is within ±60Hz for between "Forward" and "Reverse" mode.

Note: The playback head is supplied on the head arm assembly. (See the "Mechanism Parts Location" on page 41.)
The assembly requires no adjustment.

● Adjustment Point

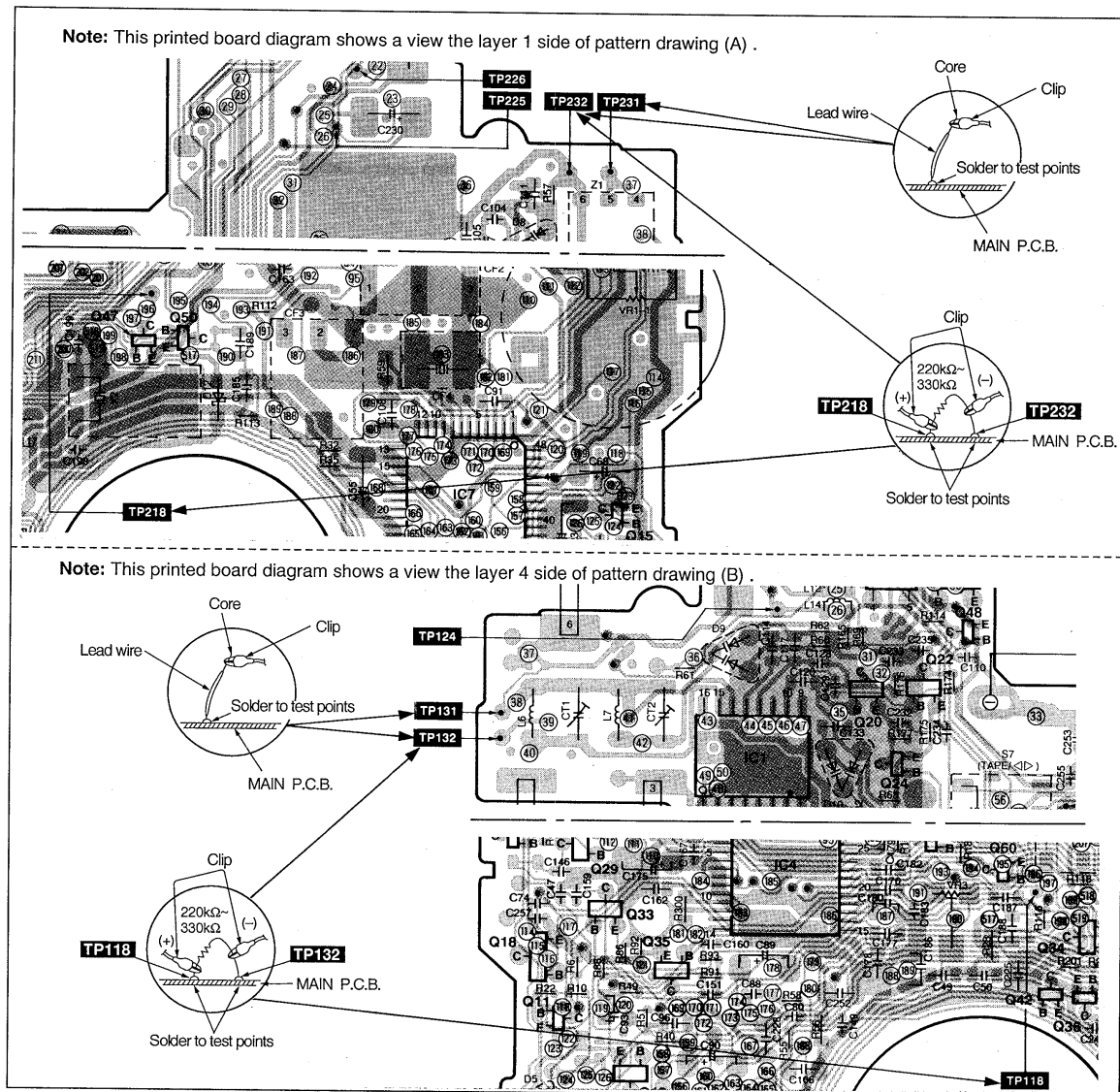


Fig. 1

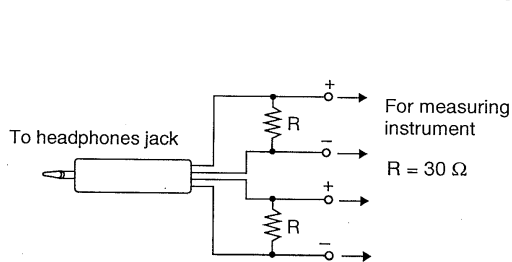


Fig. 2

Note: This adjustment points shown a front view of the IC5 mounting surface as shown in Fig. 3.

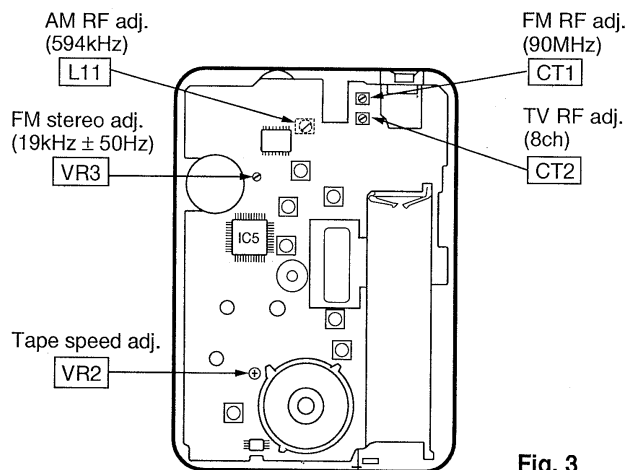


Fig. 3

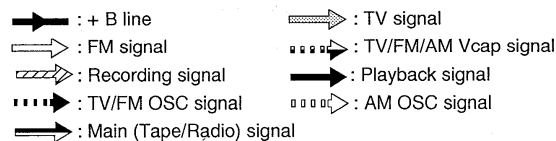
■ Schematic Diagram (See parts list on pages 37~39, 42, 43.)

● This schematic diagram may be modified at any time with development of new technology.)

Notes:

- **S3** : MODE select switch.
- **S4** : MEMORY switch.
- **S5** : - / REW switch.
- **S6** : REC/REC PAUSE switch.
- **S7** : Play (◀▶) switch.
- **S8** : + / FF switch.
- **S9** : AUTO switch.
- **S10** : RADIO ON / BAND select switch.
- **S11** : RADIO OFF / STOP (■) switch.
- **S12-1** : Side B of Tape rec. inhibit switch.
- **S12-2** : Tape detector (METAL/NORMAL) switch in "OFF (METAL)" position.
- **S13-1** : Side A of Tape rec. inhibit switch.
- **S13-2** : Tape IN/OUT det. switch in "OUT(OFF)" position. [IN(ON)... Tape in, OUT(OFF)...Tape out]
- **S14** : Beet proof / Stereo mode switch in "● / MONO" position.
- **S15** : Dolby noise reduction (□□ NR) switch in "OFF" position.
- **S16** : Mech. det.(FWD/STOP/REV) switch in "REV" position.
- **S17** : B.S./REV MODE/STEREO MODE switch in "OFF/ ↻ / MONO" position.
- **S18** : HOLD (HOLD) switch in "OFF" position.
- **VR1-1 / VR1-2** : Volume adjustment.
- **VR2** : Tape speed adjustment.
- **VR3** : FM stereo adjustment.
- DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
No mark...FF mode, Tape recording...(()),
FM/ TV... < > , AM... ()
- Current consumption with output level 1mW.
Tape playback: **68mA**.
Recording with mic.: **123mA**.
Radio reception: **66mA**.
Recording from radio: **165mA**.

● Signal line

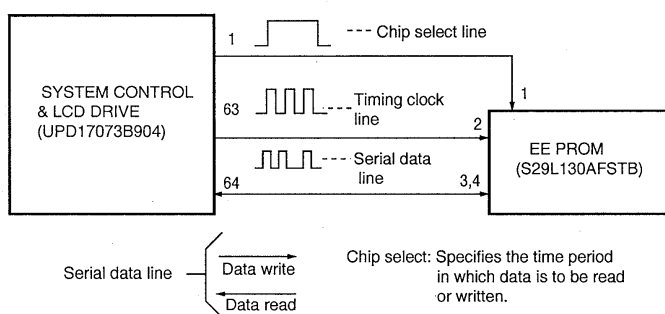


● Check Point of Signal

Check Item		TEST POINT	
		FWD	REV
Head Input	L ch	TP152	TP156
	R ch	TP153	TP155
	VREF	TP154	TP157
Power amp. → Headphones Output	L ch	TP124 or TP224	
	R ch	TP125 or TP225	
	COM	TP126 or TP226	
DC-DC Converter (Booster)	2.4V output	TP102	
	GND	TP101	
Photo Coupler (End)	Pulse output	TP133	

● EEPROM (Electrically Erasable Programmable Read Only Memory)

- The unit contains a rewritable non-volatile EEPROM (Part No. S29L130AFSTB), which retains stored data after the unit power is removed.

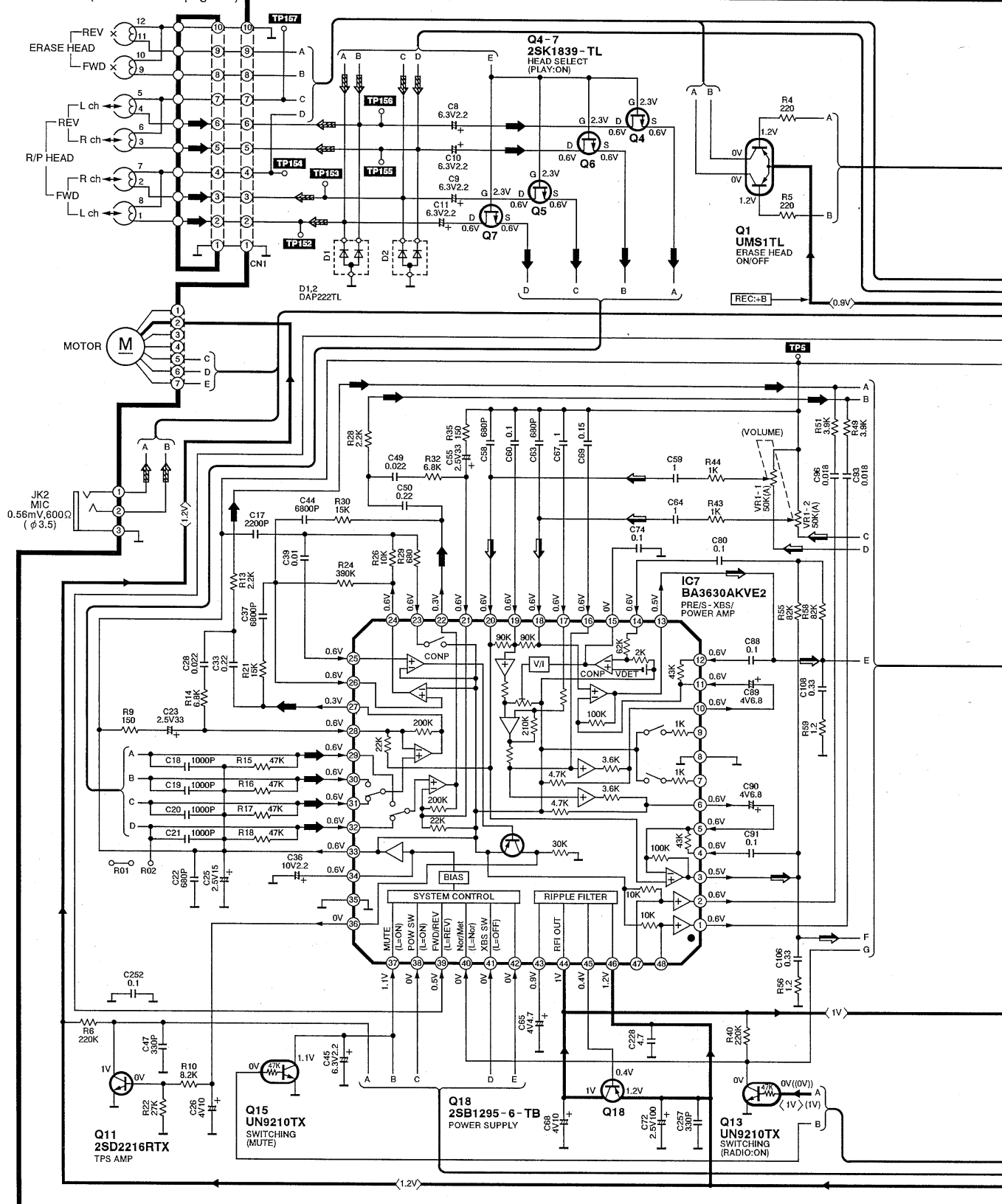


- 1.The contents of tuner memory (test state band and frequency), tape counter value and so forth are saved to the EEPROM when the free RAM area is full or a power off process has been completed.
- 2.If the radio is turned on or atape play operation is started subsequently, the PLL processor reads the most recent tuner information from the EEPROM and loads it into its internal RAM.
- 3.This save/load process retains tuner information after the unit power has been switched off.

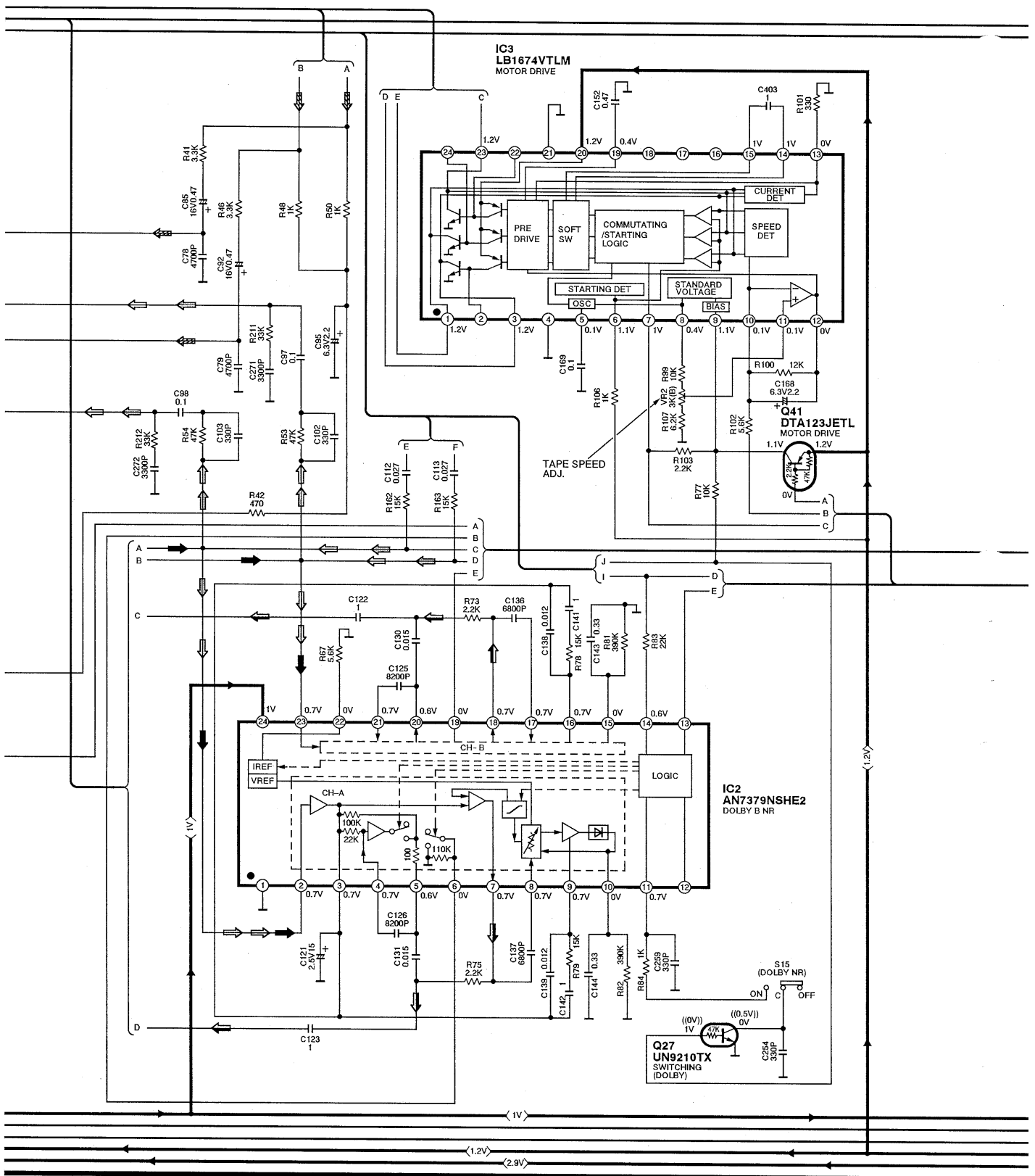
B HEAD CIRCUIT






(P.C.Board: on page 32)

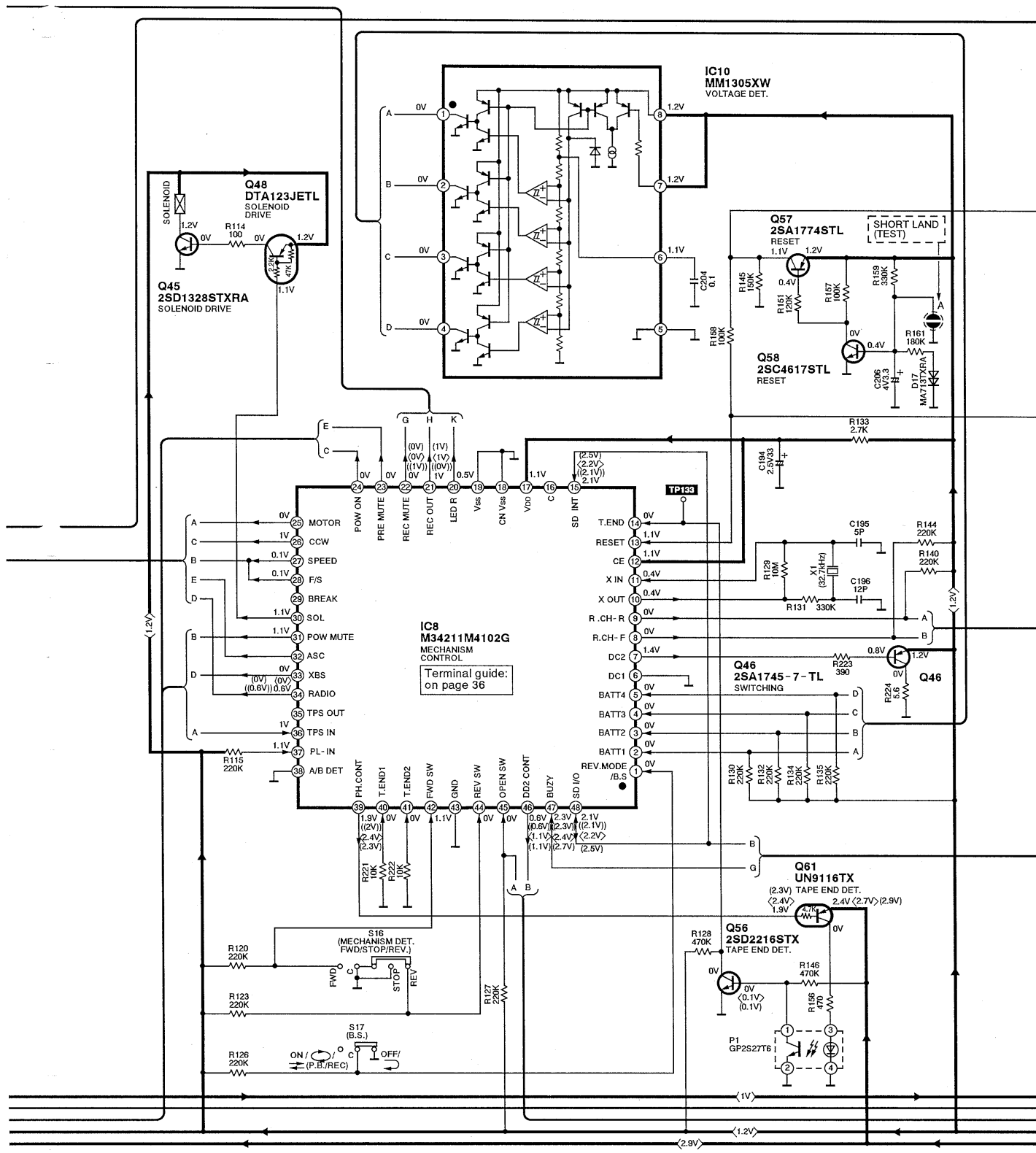
A MAIN CIRCUIT (P.C.Board:on pages 30~33)





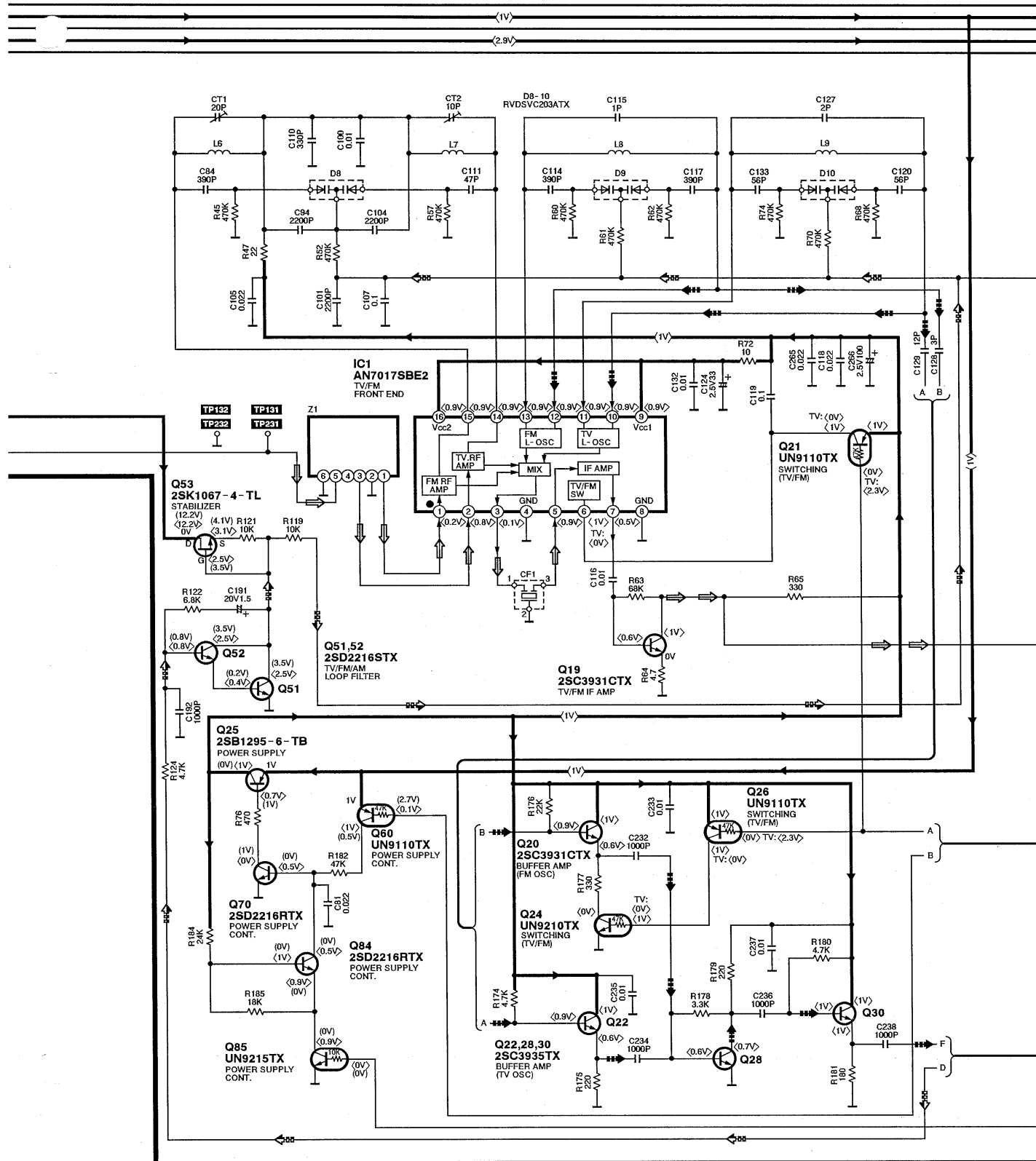
A MAIN CIRCUIT (P.C.Board: on pages 30~33)

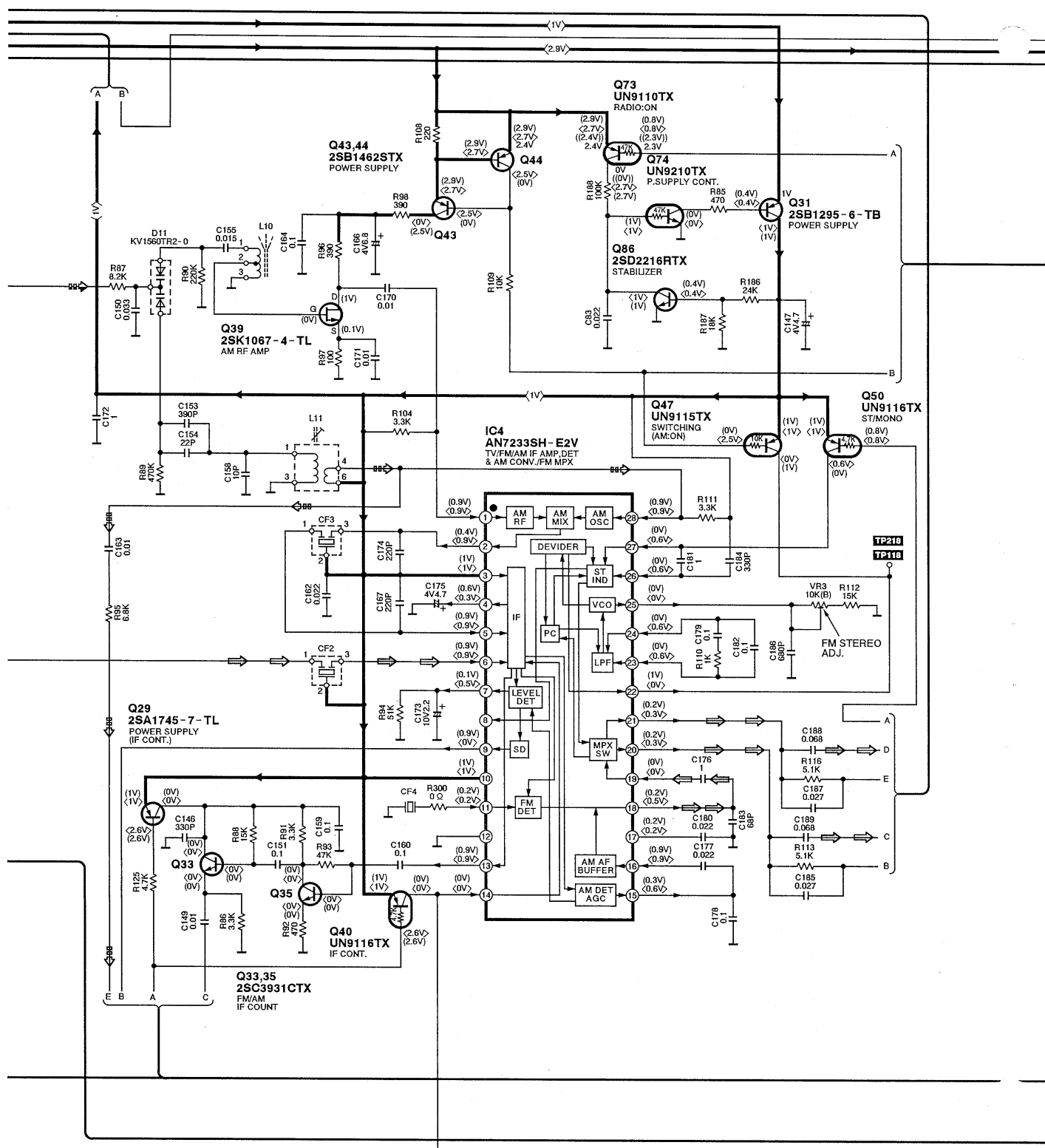
Notes: •  : FM signal •  : Playback signal •  : Recording signal •  : Main (Tape/Radio) signal
 : TV signal



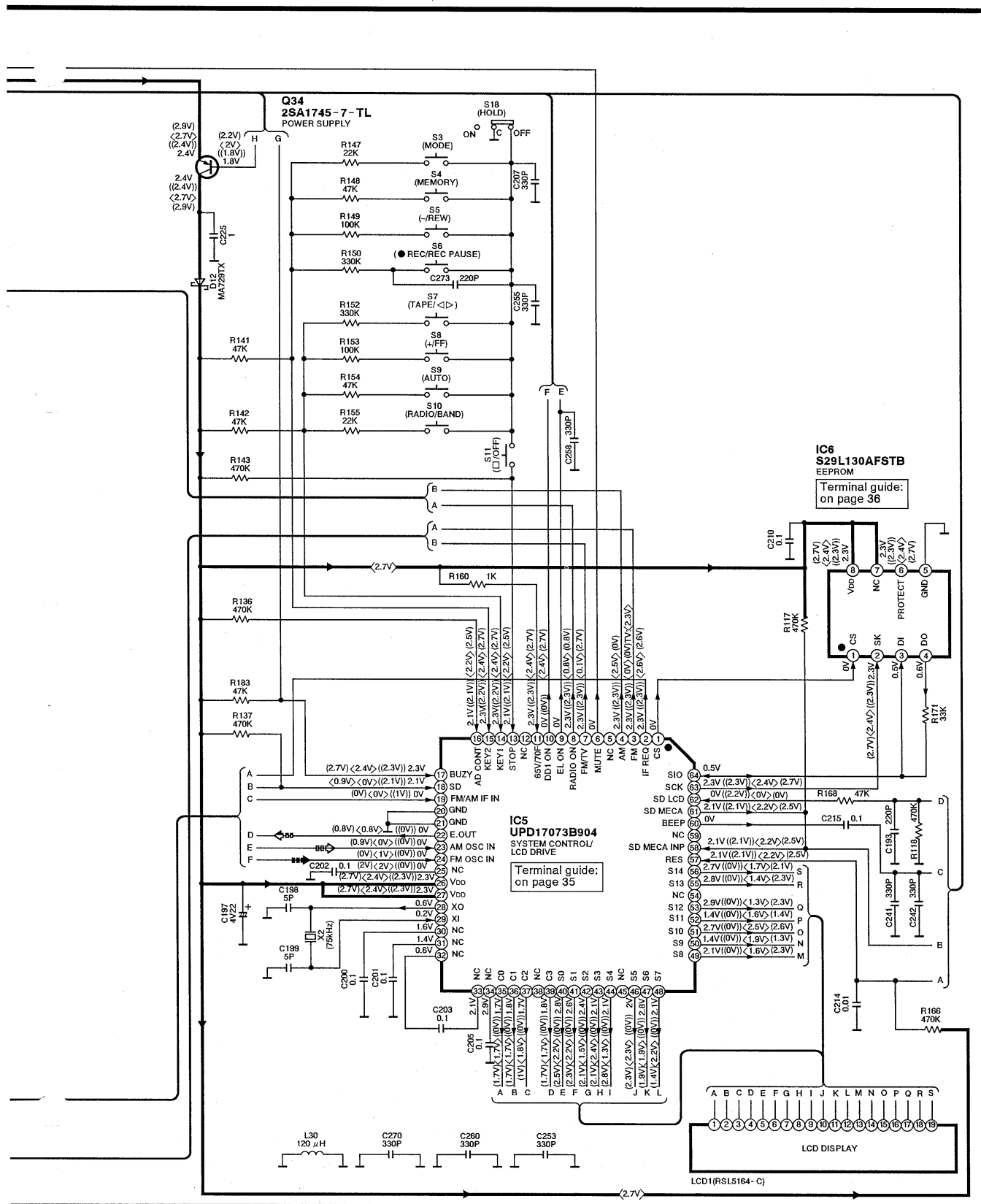


Notes: ● : FM signal ● : TV/FM OSC signal ● : Main (Tape/Radio) signal
● : TV/FM/AM Vcap signal



A MAIN CIRCUIT (P.C.Board: on pages 30~33)

Notes: • \Rightarrow : FM signal • \Rightarrow : TV/FM/AM Vcap signal • \Rightarrow : AM OSC signal • \Rightarrow : TV/FM OSC signal



Printed Circuit Board and Wiring Connection Diagram

● This printed circuit board and wiring connection diagram may be modified at any time with development of new technology.)

● Pattern drawing (A) (layer 1 and 2)

Notes:

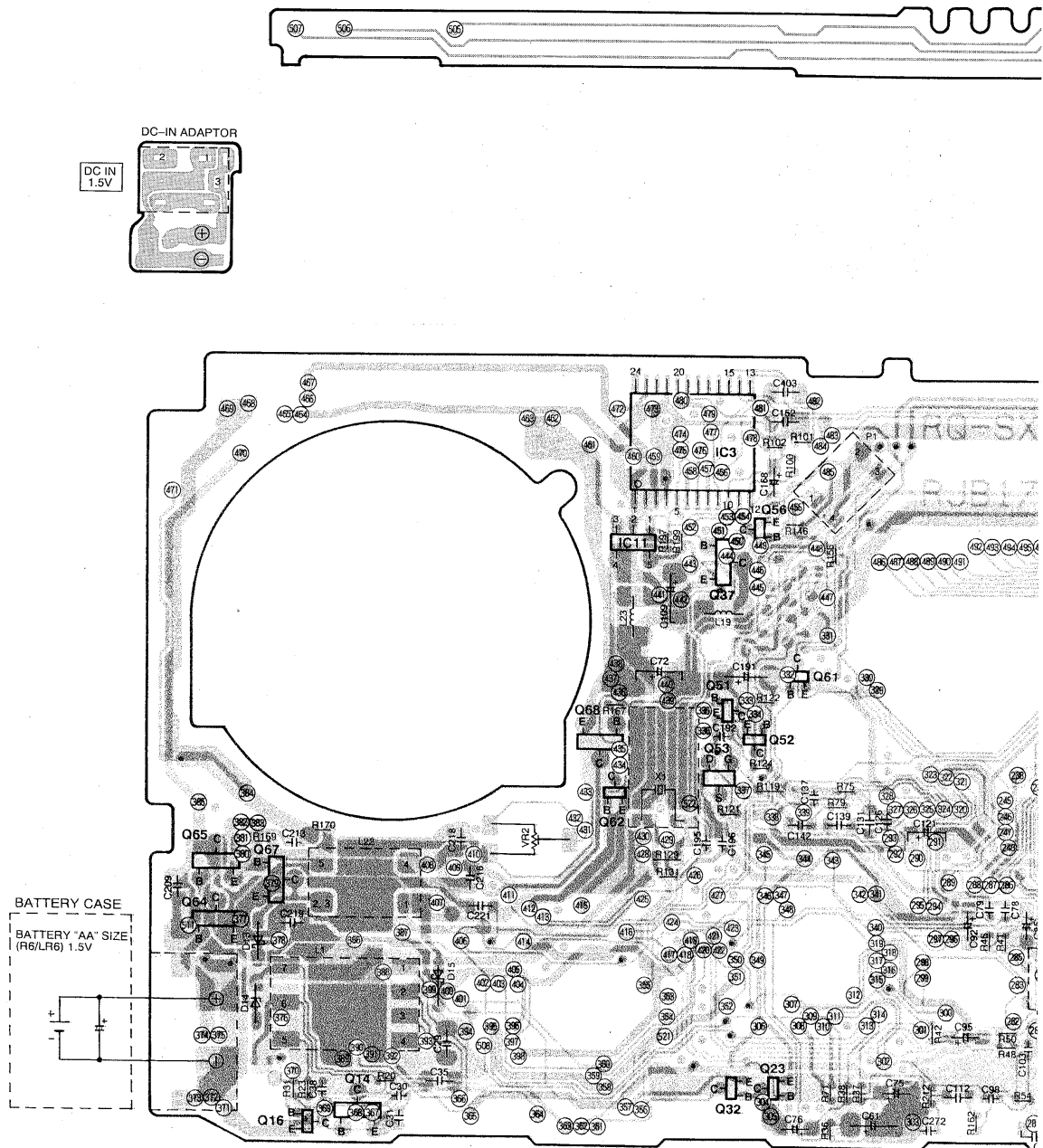
The printed circuit board consists of four pattern layers.

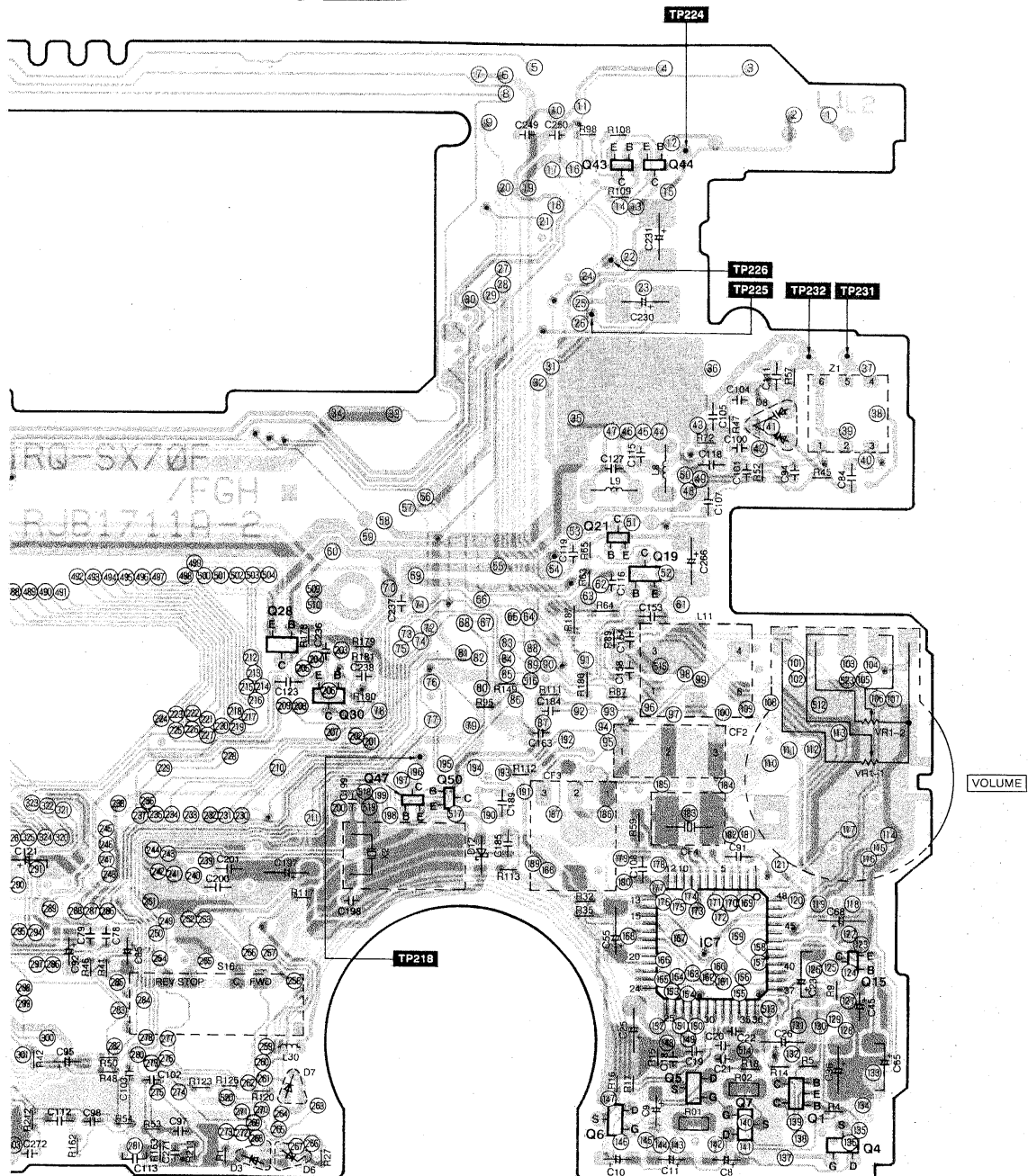
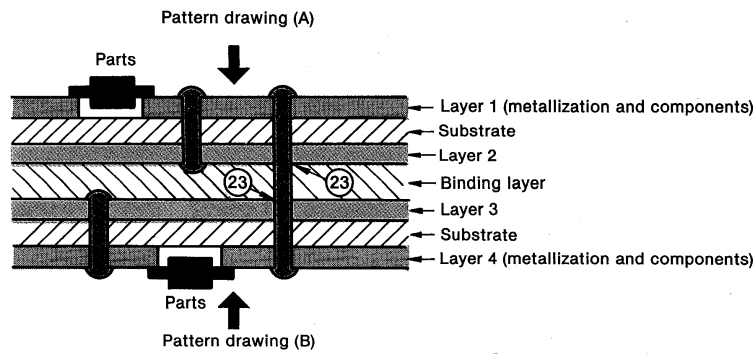
- The metallization patterns in layers 1 and 2 are shown in pattern drawing (A), and those in layers 3 and 4 are shown in patterns drawing (B).
- In drawings (A) and (B), the visible layers (layers 1 and 4) are printed in black. The invisible layers (layer 2 and 3) are printed in blue.

● Blue dots (●) in the drawings indicate through-hole connections between layers 1 and 2 or layers 3 and 4.

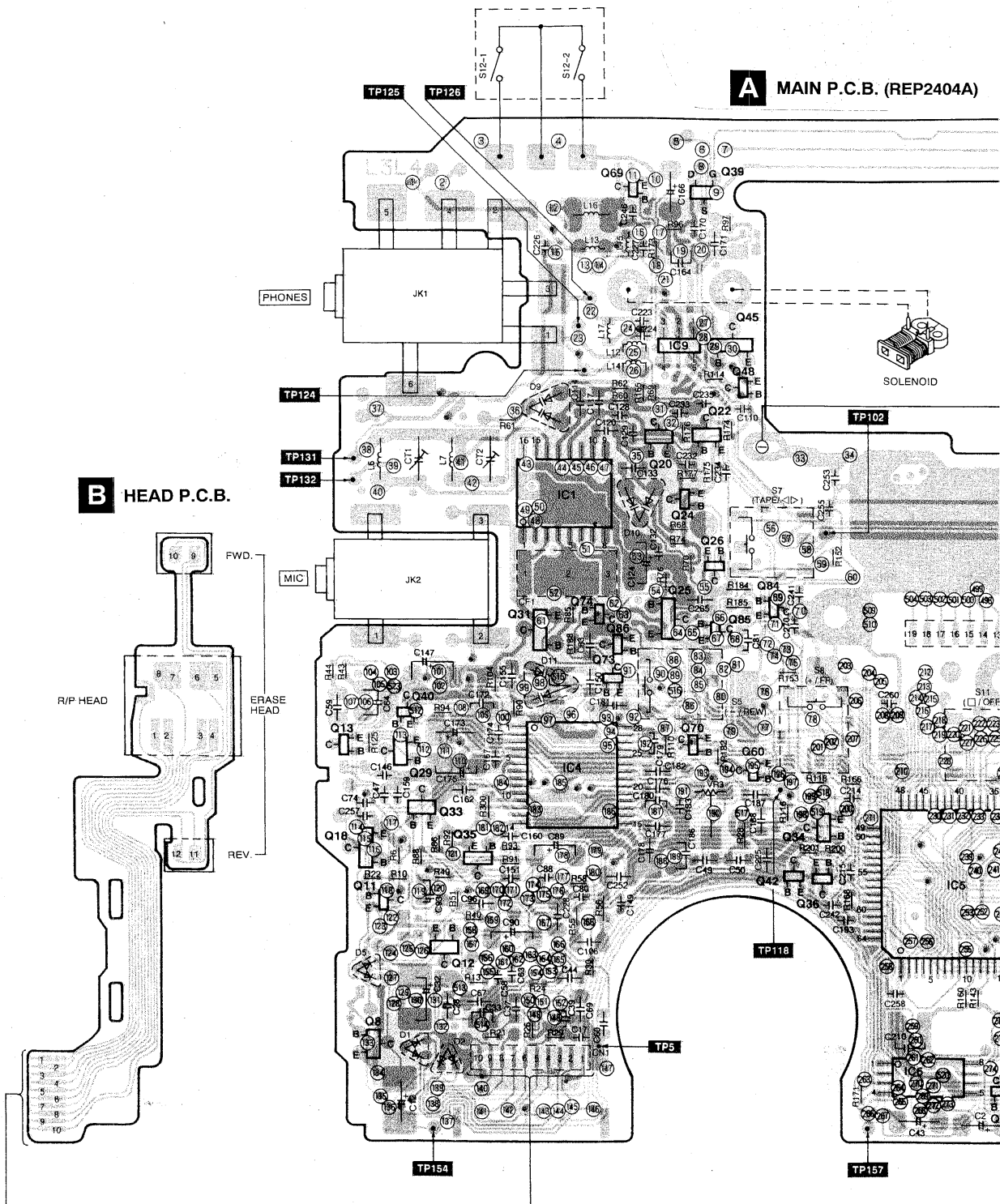
● Encircled numbers in the pattern drawings indicate through-hole connections across layers between patterns (A) and (B).

[The same number in pattern drawing (A) and (B) indicates the same through-hole connection.]

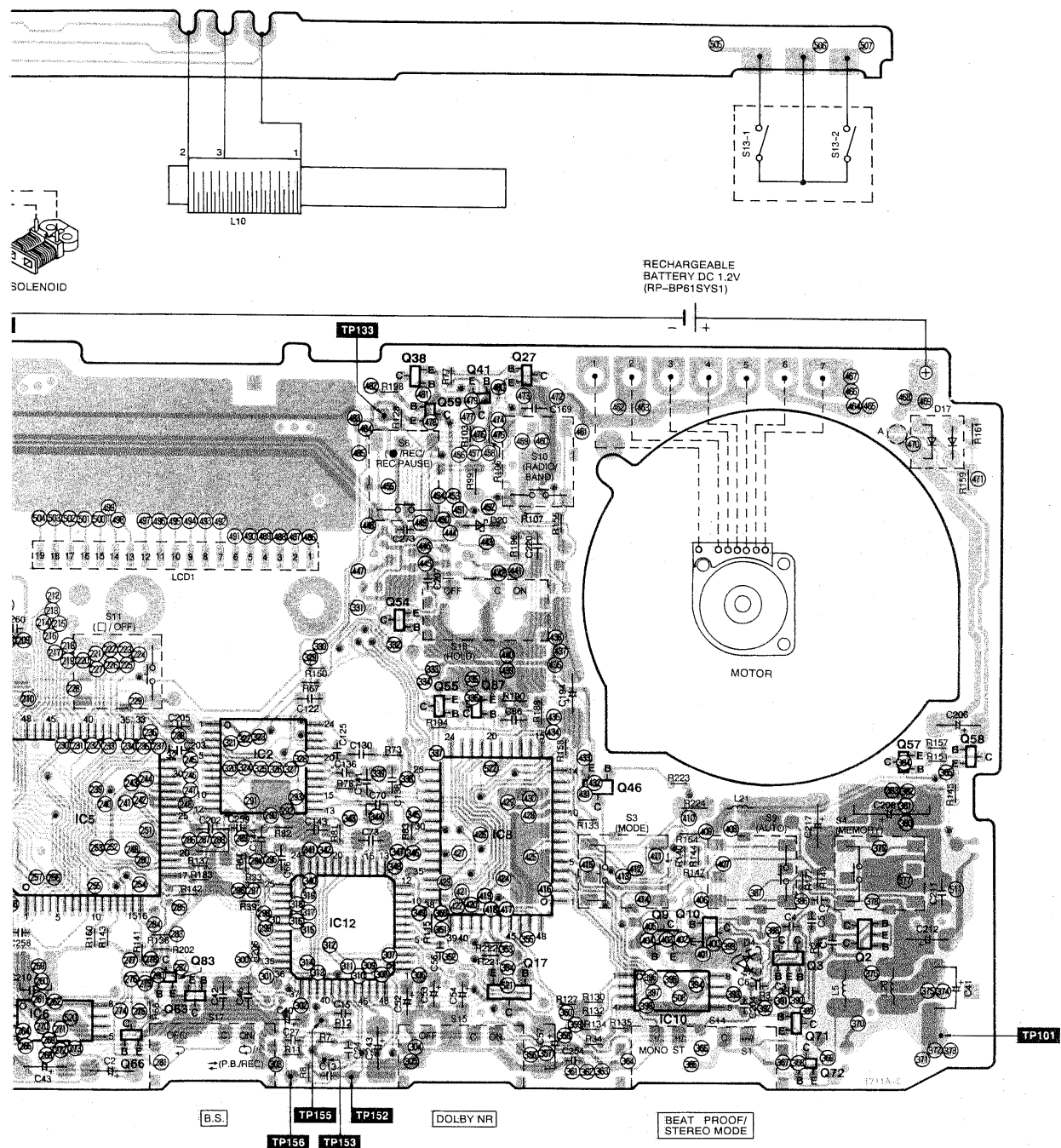




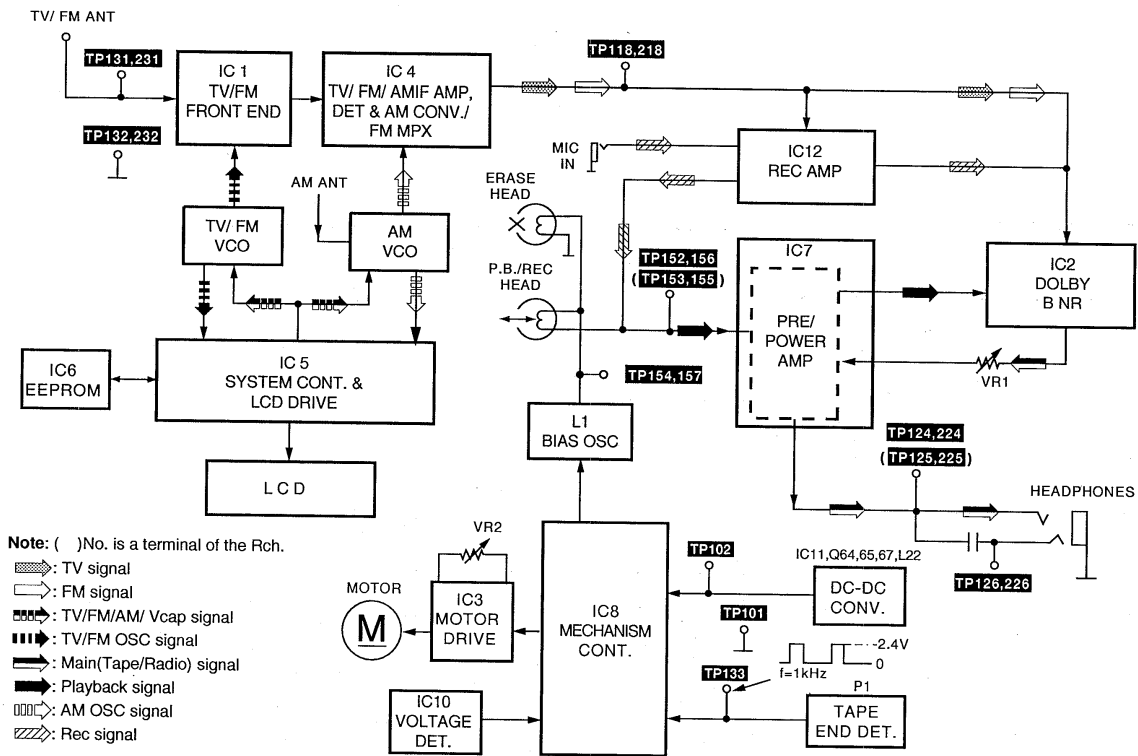
• Pattern drawing (B) (layer 3 and 4)



(REP2404A)



Block Diagram



Terminal Guide of IC's, Transistors and Diodes

<div>S29L130AFSTB8PIN</div> <div>AN7017SBE216PIN</div> <div>LB1674VTLM24PIN</div> <div>AN7233SH-E2V28PIN</div> <div>AN7379NSHE224PIN</div> <div>No.1</div>	<div>S8322D0JT2PST9123NR</div> <div></div>	<div>M34211M4102G</div> <div></div>	<div>BA3630AKVE248PIN</div> <div>UPD17073B90464PIN</div> <div></div>		
<div>LA3235W-TFM</div> <div></div>	<div>MM1305XW</div> <div></div>	<div>2SA1745-7-TL2SC3935TX2SD2436STXRAUN9116TX</div> <div>2SA1774STL2SC4617STLDTA115TETLUN9210TX</div> <div>2SB1295-6-TB2SD1048X7TXDTA123JETLUN9214TX</div> <div>2SB815B7TX2SD1328STXRAUN9110TXUN9215TX</div> <div>2SB1462STX2SD1820ASTXUN9111TX2SD2216RTX</div> <div>2SC3931CTX2SD2216STXUN9115TX</div>			
<div>2SK1067-4-TL2SK1839-TL</div> <div></div>	<div>UMS1TLXP1216TX</div> <div></div>	<div>DAP222TL</div> <div></div>	<div>DA121TL</div> <div></div>	<div>MA713TXRA</div> <div></div>	<div>RVDSVC203ATXKV1560TR2-0</div> <div></div>
<div>MA8120MTX</div> <div></div>	<div>MA729TX</div> <div></div>				

Terminal Guide

● IC5 (UPD17073B904): System control & LCD drive

Pin No.	Mark	I/O	Function
1	CS	O	Chip select signal output terminal.
2	IF REQ	O	IF count control output terminal.
3	FM	O	Band select (FM) output terminal. (FM: "L")
4	AM	O	Band select (AM) output terminal. (AM: "L")
5	NC	—	Not connected
6	MUTE	O	Muting signal output terminal.
7	FM/TV	O	Band select (FM/TV) output terminal. (FM/TV: "L")
8	RADIO ON	O	Radio power ON output terminal. (RADIO ON: "L")
9	EL ON	O	Power control output terminal.
10	DD1 ON	O	DC-DC converter control (ON) output terminal.
11	65V/70F	I	Not used, connected to bias line through resistor.
12	NC	—	Not connected.
13	STOP	I	Key switch (STOP) det. terminal.
14	KEY1	I	Key switch (PLAY, +, AUTO, RADIO) det. terminal.
15	KEY2	I	Key switch (MODE, MEMO, -) det. terminal.
16	AD CONT	I	Not used, connected to bias line through resistor.
17	BUZY	I	Beep control input terminal.
18	SD	I	Received signal level det. input terminal.
19	FM/AM IF IN	I	FM/AM IF count signal input terminal.
20	GND	—	GND terminal.
21	GND	—	GND terminal.
22	E.OUT	O	TV/FM/AM Vcap signal output terminal.
23	AM OSC IN	I	AM OSC signal input terminal.
24	FM OSC IN	I	FM OSC signal input terminal.
25	NC	—	Not used, connected to capacitor.
26	VDD	I	Power supply terminal.
27	VDD	I	Power supply terminal.
28	XO	O	Crystal OSC terminal. (F=75kHz)
29	XI	I	
30	NC	—	Not used, connected to capacitor.
31	NC	—	Not used, connected to capacitor.
32	NC	—	Not used, connected to capacitor.



Pin No.	Mark	I/O	Function
33	NC	—	Not used, connected to capacitor.
34	NC	—	Not used, connected to capacitor.
35	C0	O	LCD common signal output terminal.
37	C2		
38	NC	—	Not connected.
39	C3	O	LCD common signal output terminal.
40	S0	O	LCD segment signal output terminal.
44	S4		
45	NC	—	Not connected.
46	S5	O	LCD segment signal output terminal.
53	S12		
54	NC	—	Not connected.
55	S13	O	LCD segment signal output terminal.
56	S14		
57	RES	I	Reset signal input terminal.
58	SD MECA INP	I	Mechanism select signal input terminal.
59	NC	—	Not connected.
60	BEEP	O	Beep control input terminal.
61	SD MECA	O	Mechanism select signal output terminal.
62	SD LCD	I	Remote controller (LCD) control input terminal.
63	SCK	O	Serial clock output terminal.
64	SIO	I/O	Serial data input/output terminal.

● IC6 (S29L130AFSTB): EEPROM

Pin No.	Mark	I/O	Function
1	CS	I	Chip select input terminal.
2	SK	I	Serial clock input terminal.
3	DI	I	Serial data input terminal.
4	DO	O	Serial data output terminal.

Pin No.	Mark	I/O	Function
5	GND	—	GND terminal.
6	PROTECT	—	Not used, open.
7	NC	—	Not used, connected to bias line.
8	VDD	I	Power supply terminal.

● IC8 (M34211M4102G): Mechanism control

Pin No.	Mark	I/O	Function
1	REV. MODE /B.S	I	B.S/reverse mode select signal input terminal. "L": OFF/  , "H": ON/ 
2 3 5	BATT1 } BATT4	I	Battery check det. input terminal.
6	DC1	—	Not used, connected to GND.
7	DC2	O	Voltage control output terminal.
8	R. CH-F	O	Radio frequency select signal (+) output terminal.
9	R. CH-R	O	Radio frequency select signal (-) output terminal.
10	X OUT	O	Crystal OSC terminal. (F=32.7kHz)
11	X IN	I	
12	CE	I	Chip select terminal. (Connected to bias line.)
13	RESET	I	Reset control input terminal.
14	T.END	I	Tape rotation det. signal input terminal. Pulse signal: OK....Mode hold Pulse signal: NG....STOP, R.PLAY
15	SD INT	I	Mechanism select signal terminal.
16	C	—	Not used, open.
17	VDD	I	Power supply terminal.
18	CN VSS	—	GND terminal.
19	VSS	—	GND terminal.
20	LED R	O	Head select (REV) signal output terminal.
21	REC OUT	O	Not used, connected to GND.
22	REC MUTE	O	Not used, connected to GND.
23	PRE MUTE	O	Muting signal output terminal.
24	POW ON	O	Power ON control output terminal.

Pin No.	Mark	I/O	Function
25	MOTOR	O	Motor power control terminal.
26	CCW	O	Reverse motor control terminal.
27	SPEED	O	Motor speed-up signal output terminal.
28	F/S	O	Motor speed control output terminal.
29	BRAKE	O	Motor brake signal output terminal.
30	SOL	O	Solenoid drive signal output terminal.
31	POW MUTE	O	Muting signal output terminal.
32	ASC	O	ASC EQ control signal output terminal.
33	XBS		
34	RADIO	O	Radio select output terminal.
35	TPS OUT	O	TPS signal output terminal. (Not used, open.)
36	TPS IN	I	TPS signal input terminal.
37	PL IN	I	Not used, connected to bias line through resistor.
38	A/B DET	I	Tape A/B side det. input terminal. (Not used, connected to GND.)
39	PH. CONT.	O	Photo coupler power control terminal.
40	T.END1	I	Not used, connected to GND.
41	T.END2		
42	FWD SW	I	Mechanism (FWD) det. input terminal.
43	GND	—	GND terminal.
44	REV. SW	I	Mechanism (REV) det. input terminal.
45	OPEN SW	I	Inputs the signal that detects whether the cassette tape is inserted. "L": ON (CLOSE); the tape is inserted. "H": OFF (OPEN); the tape is not inserted.
46	DD2 CONT	O	DC-DC converter control output terminal.
47	BUZY	I	Beep control input terminal.
48	SD I/O	I/O	Mechanism select signal input terminal.

Resistors and Capacitors

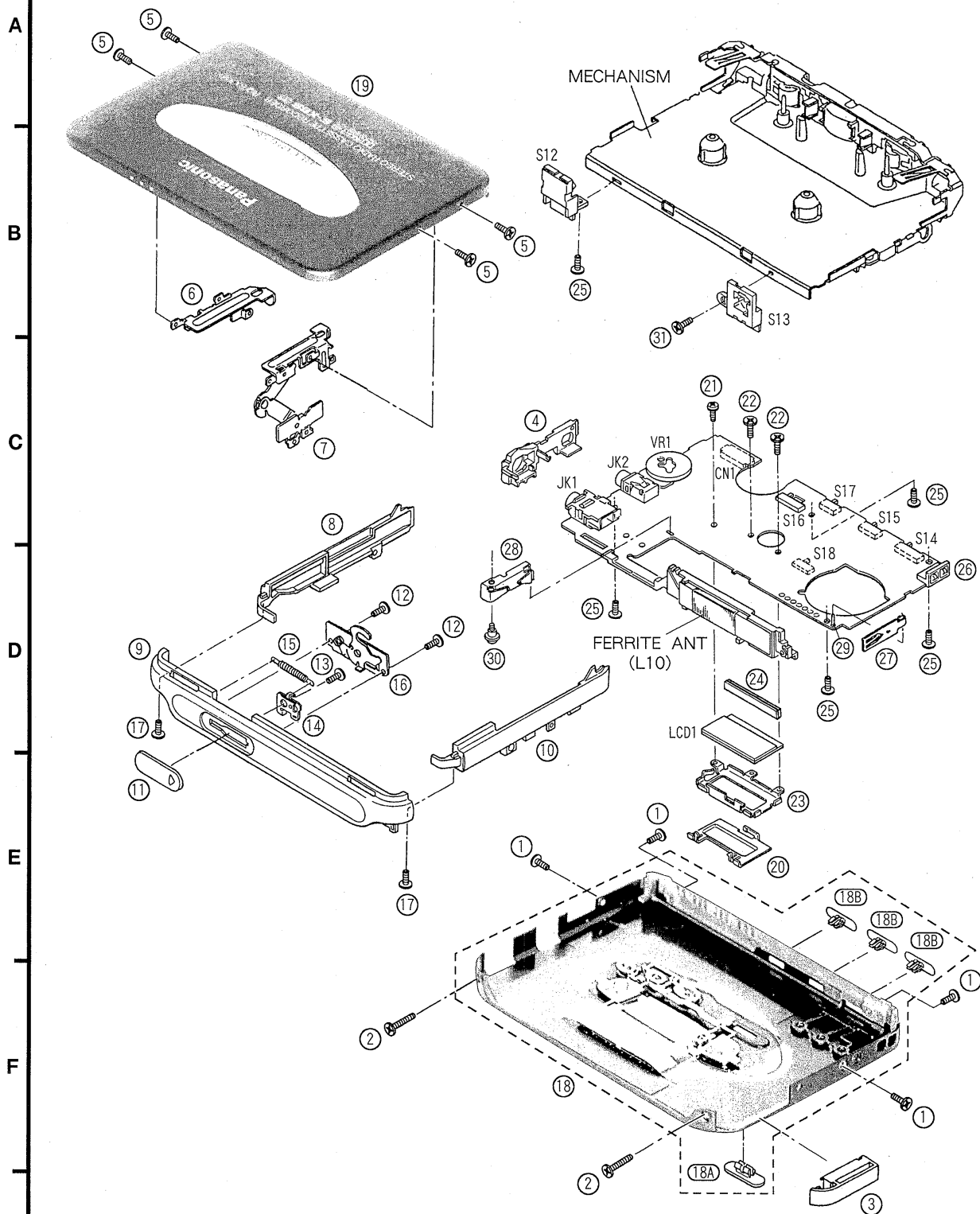
Notes: * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS						
R1	ERJ2GEJ332X	2W 3.3K	R58	ERJ2GEJ823X	2W 82K	R113	ERJ2GEJ512X	2W 5.1K
R2	ERJ2GEJ222X	2W 2.2K	R59	ERJ3GEYJ1R2V	3W 1.2	R114	ERJ2GEJ101X	2W 100
R3	ERJ2GEJ222X	2W 2.2K	R60-62	ERJ2GEJ474X	2W 470K	R115	ERJ2GEJ224X	2W 220K
R4, 5	ERJ2GEJ221X	2W 220	R63	ERJ2GEJ683X	2W 68K	R116	ERJ2GEJ512X	2W 5.1K
R6	ERJ2GEJ224X	2W 220K	R64	ERJ3GEYJ4R7V	1/16W 4.7	R117, 118	ERJ2GEJ474X	2W 470K
R7, 8	ERJ2GEJ682X	2W 6.8K	R65	ERJ2GEJ331X	2W 330	R119	ERJ3GEYJ103V	1/16W 10K
R9	ERJ2GEJ151X	2W 150	R66	ERJ2GEJ104X	2W 100K	R120	ERJ2GEJ224X	2W 220K
R10	ERJ2GEJ822X	2W 8.2K	R67	ERJ2GEJ562X	2W 5.6K	R121	ERJ2GEJ103X	2W 10K
R11, 12	ERJ2GEJ682X	2W 6.8K	R68	ERJ2GEJ474X	2W 470K	R122	ERJ2GEJ682X	2W 6.8K
R13	ERJ2GEJ222X	2W 2.2K	R69	ERJ2GEJ153X	2W 15K	R123	ERJ2GEJ224X	2W 220K
R14	ERJ2GEJ682X	2W 6.8K	R70	ERJ2GEJ474X	2W 470K	R124, 125	ERJ2GEJ472X	2W 4.7K
R15-18	ERJ2GEJ473X	2W 47K	R71	ERJ2GEJ101X	2W 100	R126, 127	ERJ2GEJ224X	2W 220K
R20	ERJ2GEJ392X	2W 3.9K	R72	ERJ2GEJ100X	2W 10	R128	ERJ2GEJ474X	2W 470K
R21	ERJ2GEJ153X	2W 15K	R73	ERJ2GEJ222X	2W 2.2K	R129	ERJ3GEYK106V	1/16W 10M
R22	ERJ2GEJ273X	2W 27K	R74	ERJ2GEJ474X	2W 470K	R130	ERJ2GEJ224X	2W 220K
R23	ERJ2GEJ101X	2W 100	R75	ERJ2GEJ222X	2W 2.2K	R131	ERJ2GEJ334X	2W 330K
R24	ERJ2GEJ394X	2W 390K	R76	ERJ2GEJ471X	2W 470	R132	ERJ2GEJ224X	2W 220K
R26	ERJ2GEJ103X	2W 10K	R77	ERJ2GEJ103X	2W 10K	R133	ERJ2GEJ272X	2W 2.7K
R27	ERJ2GEJ332X	2W 3.3K	R78, 79	ERJ2GEJ153X	2W 15K	R134, 135	ERJ2GEJ224X	2W 220K
R28	ERJ3GEYJ222V	1/16W 2.2K	R81, 82	ERJ2GEJ394X	2W 390K	R136, 137	ERJ2GEJ474X	2W 470K
R29	ERJ2GEJ681X	2W 680	R83	ERJ2GEJ223X	2W 22K	R140	ERJ2GEJ224X	2W 220K
R30	ERJ2GEJ153X	2W 15K	R84	ERJ2GEJ102X	2W 1K	R141, 142	ERJ2GEJ473X	2W 47K
R31	ERJ2GEJ334X	2W 330K	R85	ERJ2GEJ471X	2W 470	R143	ERJ2GEJ474X	2W 470K
R32	ERJ2GEJ682X	2W 6.8K	R86	ERJ2GEJ332X	2W 3.3K	R144	ERJ2GEJ224X	2W 220K
R33	ERJ2GEJ333X	2W 33K	R87	ERJ2GEJ822X	2W 8.2K	R145	ERJ2GEJ154X	2W 150K
R34	ERJ2GEJ104X	2W 100K	R88	ERJ2GEJ153X	2W 15K	R146	ERJ2GEJ474X	2W 470K
R35	ERJ2GEJ151X	2W 150	R89	ERJ2GEJ474X	2W 470K	R147	ERJ2GEJ223X	2W 22K
R36	ERJ2GEJ105X	2W 1M	R90	ERJ2GEJ224X	2W 220K	R148	ERJ2GEJ473X	2W 47K
R37, 38	ERJ2GEJ471X	2W 470	R91	ERJ2GEJ332X	2W 3.3K	R149	ERJ2GEJ104X	2W 100K
R39	ERJ2GEJ223X	2W 22K	R92	ERJ2GEJ471X	2W 470	R150	ERJ2GEJ334X	2W 330K
R40	ERJ2GEJ224X	2W 220K	R93	ERJ2GEJ473X	2W 47K	R151	ERJ2GEJ124X	2W 120K
R41	ERJ2GEJ332X	2W 3.3K	R94	ERJ2GEJ513X	2W 51K	R152	ERJ2GEJ334X	2W 330K
R42	ERJ2GEJ471X	2W 470	R95	ERJ2GEJ682X	2W 6.8K	R153	ERJ2GEJ104X	2W 100K
R43, 44	ERJ2GEJ102X	2W 1K	R96	ERJ2GEJ391X	2W 390	R154	ERJ2GEJ473X	2W 47K
R45	ERJ2GEJ474X	2W 470K	R97	ERJ2GEJ101X	2W 100	R155	ERJ2GEJ223X	2W 22K
R46	ERJ2GEJ332X	2W 3.3K	R98	ERJ2GEJ391X	2W 390	R156	ERJ2GEJ471X	2W 470
R47	ERJ2GEJ220X	2W 22	R99	ERAS15ZJ103V	1/10W 10K	R157, 158	ERJ2GEJ104X	2W 100K
R48	ERJ2GEJ102X	2W 1K	R100	ERJ2GEJ123X	2W 12K	R159	ERJ3GEYD334V	3W 330K
R49	ERJ2GEJ392X	2W 3.9K	R101	ERJ2GEJ331X	2W 330	R160	ERJ2GEJ102X	2W 1K
R50	ERJ2GEJ102X	2W 1K	R102	ERJ2GEJ562X	2W 5.6K	R161	ERJ3GEYD184V	3W 180K
R51	ERJ2GEJ392X	2W 3.9K	R103	ERJ2GEJ222X	2W 2.2K	R162, 163	ERJ2GEJ153X	2W 15K
R52	ERJ2GEJ474X	2W 470K	R104	ERJ2GEJ332X	2W 3.3K	R165	ERJ2GEJ153X	2W 15K
R53, 54	ERJ2GEJ473X	2W 47K	R106	ERJ2GEJ102X	2W 1K	R166	ERJ2GEJ474X	2W 470K
R55	ERJ2GEJ823X	2W 82K	R107	ERJ2GEJ622X	2W 6.2K	R167	ERJ2GEJ471X	2W 470
R56	ERJ3GEYJ1R2V	3W 1.2	R108	ERJ2GEJ221X	2W 220	R168	ERJ2GEJ473X	2W 470K
R57	ERJ2GEJ474X	2W 470K	R109	ERJ2GEJ103X	2W 10K	R169	ERJ2GEJ331X	2W 330
			R110	ERJ2GEJ102X	2W 1K	R170	ERJ2GEJ470X	2W 47
			R111	ERJ2GEJ332X	2W 3.3K	R171	ERJ2GEJ333X	2W 33K
			R112	ERJ2GEJ153X	2W 15K	R172	ERJ2GEJ472X	2W 4.7K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R173	ERJ2GEJ392X	2W 3.9K	C24	ECUE1E392KBQ	25V 3900P	C86	RCUV1C223KBV	16V 0.022U
R174	ERJ2GEJ472X	2W 4.7K	C25	RCSX0EY156RE	2.5V 15U	C88	ECUE1C104ZFQ	16V 0.1U
R175	ERJ2GEJ221X	2W 220	C26	RCST0GA106RE	4V 10U	C89, 90	RCST0GY685RE	4V 6.8U
R176	ERJ2GEJ223X	2W 22K	C27	ECUE1E392KBQ	25V 3900P	C91	ECUVNC104ZV	16V 0.1U
R177	ERJ2GEJ331X	2W 330	C28	RCUV1C223KBV	16V 0.022U	C92	RCST1CZ474RE	16V 0.47U
R178	ERJ2GEJ332X	2W 3.3K	C29	ECUV1H102JCN	50V 1000P	C93	ECUVNE183KBV	25V 0.018U
R179	ERJ2GEJ221X	2W 220	C30, 31	ECUE1H332KBQ	50V 3300P	C94	ECUE1H222KBQ	50V 2200P
R180	ERJ2GEJ472X	2W 4.7K	C32	RCST1EX475RG	25V 4.7U	C95	RCST0JZ225RE	6.3V 2.2U
R181	ERJ2GEJ181X	2W 180	C33	ECUV1C224ZV	16V 0.022U	C96	ECUVNE183KBV	25V 0.018U
R182, 183	ERJ2GEJ473X	2W 47K	C35	ECUV1H102JCN	50V 1000P	C97, 98	ECUE1C104ZFQ	16V 0.1U
R184	ERJ3GEYD243V	3W 24K	C36	RCST1AY225RE	10V 2.2U	C100	ECUE1C103KBQ	16V 0.01U
R185	ERJ3GEYD183V	1/16W 18K	C37	ECUVNH682KBV	50V 6800P	C101	ECUE1H222KBQ	50V 2200P
R186	ERJ3GEYD243V	1/16W 24K	C38	ECUE1H222KBQ	50V 2200P	C102, 103	ECUE1H331KBQ	50V 330P
R187	ERJ3GEYD183V	1/16W 18K	C39	ECUE1C103KBQ	16V 0.01U	C104	ECUE1H222KBQ	50V 2200P
R188	ERJ2GEJ104X	2W 100K	C40	RCST0JZ225RE	6.3V 2.2U	C105	RCUV1C223KBV	16V 0.022U
R189	ERJ3GEYD243V	1/16W 24K	C41	RCSX0EY226RE	2.5V 22U	C106	ECUVNC334KBN	16V 0.33U
R190	ERJ3GEYD183V	1/16W 18K	C42	ECUVNA105KBN	10V 1U	C107	ECUV1C104KBV	16V 0.1U
R194	ERJ2GEJ154X	2W 150K	C43	RCST1EY474RE	25V 0.47U	C108	ECUVNC334KBN	16V 0.33U
R196	ERJ3GEYJ101V	1/16W 100	C44	ECUVNH682KBV	50V 6800P	C109	ECST0EY336RR	2.5V 33U
R197, 198	ERJ2GEJ104X	2W 100K	C45	RCST0JZ225RE	6.3V 2.2U	C110	ECUE1H331KBQ	50V 330P
R199	ERJ2GEJ332X	2W 3.3K	C46	ECUVNA105KBN	10V 1U	C111	ECUV1H470GCV	50V 47P
R200	ERJ2GEJ224X	2W 220K	C47	ECUE1H331KBQ	50V 330P	C112, 113	ECUVNE273KBV	25V 0.027U
R201	ERJ2GEJ103X	2W 10K	C49	RCUV1C223KBV	16V 0.022U	C114	ECUV1H391GCV	50V 390P
R202	ERJ2GEJ224X	2W 220K	C50	ECUV1C224ZV	16V 0.022U	C115	ECUE1H010CCQ	50V 1P
R206	ERJ2GEJ333X	2W 33K	C52	RCST0JZ225RE	6.3V 2.2U	C116	ECUE1H103ZFQ	50V 0.01U
R211, 212	ERJ2GEJ333X	2W 33K	C53	RCST0GZ335RE	4V 3.3U	C117	ECUV1H391GCV	50V 390P
R221, 222	ERJ2GEJ103X	2W 10K	C54	RCST0JZ225RE	6.3V 2.2U	C118	RCUV1C223KBV	16V 0.022U
R223	ERJ2GEJ391X	2W 390	C55	ECST0EY336RR	2.5V 33U	C119	ECUE1C104ZFQ	16V 0.1U
R224	ERJ6GEYJ5R6V	1/10W 5.6	C56	ECUE1H101KBQ	50V 100P	C120	ECUV1H560GCV	50V 56P
		CHIP JUMPERS	C57	RCSX0EY156RE	2.5V 15U	C121	RCSX0EY156RE	2.5V 15U
			C58	ECUE1H681KBQ	50V 680P	C122, 123	ECUV0J105ZFV	6.3V 1U
			C59	ECUVNC105ZFN	16V 1U	C124	ECST0EY336RR	2.5V 33U
R300	ERJ3GEYOR00V	CHIP JUMPER	C60	ECUV1C104KBV	16V 0.1U	C125, 126	ECUE1C822KBQ	16V 8200P
		CAPACITORS	C61	RCSX0EY226RE	2.5V 22U	C127	ECUE1H020CCQ	50V 2P
			C63	ECUE1H681KBQ	50V 680P	C128	ECUE1H030CCQ	50V 3P
			C64	ECUVNC105ZFN	16V 1U	C129	ECUE1H120JQC	50V 12P
C1	ECUE1C103KBQ	16V 0.01U	C65	RCST0GY475RE	4V 4.7U	C130, 131	ECUVNE153KBV	25V 0.015U
C2	RCST1EY474RE	25V 0.47U	C66	ECUV1A224KBV	10V 0.022U	C132	ECUE1C103KBQ	16V 0.01U
C3	ECUE1C103KBQ	16V 0.01U	C67	ECUVNA105KBN	10V 1U	C133	ECUV1H560GCV	50V 56P
C4	ECUE1H221KBQ	50V 220P	C68	ECST0GY106RR	4V 10U	C136, 137	ECUE1C682KBQ	16V 6800P
C5	ECUE1H820KCQ	50V 82P	C69	RCUV1C154KBN	16V 0.15U	C138, 139	ECUVNE123KBV	25V 0.012U
C6	ECUE1H221KBQ	50V 220P	C70	ECUV0J105ZFV	6.3V 1U	C141, 142	ECUV0J105ZFV	6.3V 1U
C7	ECUE1H820KCQ	50V 82P	C72	ECST0EX107RR	2.5V 100U	C143, 144	ECUVNC334ZV	16V 0.33U
C8, 9	RCST0JZ225RE	6.3V 2.2U	C73	ECUVNC105ZFN	16V 1U	C146	ECUE1H331KBQ	50V 330P
C10, 11	RCST0JZ225RE	6.3V 2.2U	C74	ECUE1C104ZFQ	16V 0.1U	C147	RCST0GY475RE	4V 4.7U
C12	RCST1EX475RG	25V 4.7U	C75, 76	RCST0JZ225RE	6.3V 2.2U	C149	ECUE1C103KBQ	16V 0.01U
C13	ECUE1E392KBQ	25V 3900P	C78, 79	ECUE1E472KBQ	25V 4700P	C150	ECUVNC333KBV	16V 0.033U
C15	ECUE1E392KBQ	25V 3900P	C80	ECUE1C104ZFQ	16V 0.1U	C151	ECUE1C104ZFQ	16V 0.1U
C17	ECUE1H222KBQ	50V 2200P	C81	RCUV1C223KBV	16V 0.022U	C152	ECUVNC474KBN	16V 0.47U
C18-21	ECUE1H102KBQ	50V 1000P	C83	RCUV1C223KBV	16V 0.022U	C153	ECUV1H391GCV	50V 390P
C22	ECUE1H681KBQ	50V 680P	C84	ECUV1H391GCV	50V 390P	C154	ECUE1H220JQC	50V 22P
C23	ECST0EY336RR	2.5V 33U	C85	RCST1CZ474RE	16V 0.47U	C155	ECUVNE153KBV	25V 0.015U

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks			
C158	ECUE1H100DCQ	50V 10P	C220	ECUV0J105ZFY	6. 3V 1U			
C159, 160	ECUE1C104ZFQ	16V 0. 1U	C221	ECUV1C104KBV	16V 0. 1U			
C162	RCUV1C223KBV	16V 0. 022U	C223, 224	ECUE1H101KBQ	50V 100P			
C163	ECUE1H103ZFQ	50V 0. 01U	C225	ECUVNC105ZFN	16V 1U			
C164	ECUVNC104ZFY	16V 0. 1U	C226	ECUE1H331KBQ	50V 330P			
C166	RCSTOGY685RE	4V 6. 8U	C227	ECUE1H101KBQ	50V 100P			
C167	ECUE1H221KBQ	50V 220P	C228	ECUV1A475ZFN	10V 4. 7U			
C168	RCSTOJZ225RE	6. 3V 2. 2U	C230, 231	ECSTOEX107RR	2. 5V 100U			
C169	ECUV1C104KBV	16V 0. 1U	C232	ECUE1H102KBQ	50V 1000P			
C170	ECUE1H103ZFQ	50V 0. 01U	C233	ECUE1C103KBQ	16V 0. 01U			
C171	ECUVNH103KBV	50V 0. 01U	C234	ECUE1H102KBQ	50V 1000P			
C172	ECUV0J105ZFY	6. 3V 1U	C235	ECUE1C103KBQ	16V 0. 01U			
C173	RCST1AY225RE	10V 2. 2U	C236	ECUE1H102KBQ	50V 1000P			
C174	ECUE1H221KBQ	50V 220P	C237	ECUE1C103KBQ	16V 0. 01U			
C175	RCSTOGY475RE	4V 4. 7U	C238	ECUE1H102KBQ	50V 1000P			
C176	ECUV0J105ZFY	6. 3V 1U	C241, 242	ECUE1H331KBQ	50V 330P			
C177	RCUV1C223KBV	16V 0. 022U	C243	ECSTOGY226RR	4V 22U			
C178, 179	ECUV1C104KBV	16V 0. 1U	C246	ECUE1H331KBQ	50V 330P			
C180	RCUV1C223KBV	16V 0. 022U	C249, 250	ECUE1H331KBQ	50V 330P			
C181	ECUV0J105ZFY	6. 3V 1U	C252	ECUVNE104KBN	25V 0. 1U			
C182	ECUV1C104KBV	16V 0. 1U	C253-255	ECUE1H331KBQ	50V 330P			
C183	ECUE1H680JCQ	50V 68P	C257-260	ECUE1H331KBQ	50V 330P			
C184	ECUE1H331KBQ	50V 330P	C265	RCUV1C223KBV	16V 0. 022U			
C185	ECUVNE273KBV	25V 0. 027U	C266	ECSTOEX107RR	2. 5V 100U			
C186	ECUV1H681KCN	50V 680P	C270	ECUE1H331KBQ	50V 330P			
C187	ECUVNE273KBV	25V 0. 027U	C271, 272	ECUE1H332KBQ	50V 3300P			
C188, 189	ECUV1C683KBV	16V 0. 068U	C273	ECUE1H221KBQ	50V 220P			
C191	RCST1DA155RE	20V 1. 5U	C403	ECUVNA105KEN	10V 1U			
C192	ECUE1H102KBQ	50V 1000P						
C193	ECUE1H221KBQ	50V 220P						
C194	ECSTOEX336RR	2. 5V 33U						
C195	ECUE1H050DCQ	50V 5P						
C196	ECUE1H120KCQ	50V 12P						
C197	ECSTOGY226RR	4V 22U						
C198, 199	ECUE1H050DCQ	50V 5P						
C200-203	ECUVNC104ZFY	16V 0. 1U						
C204	ECUE1C104ZFQ	16V 0. 1U						
C205	ECUVNC104ZFY	16V 0. 1U						
C206	RCSTOGY335RE	4V 3. 3U						
C207	ECUE1H331KBQ	50V 330P						
C208	ECSTOGC107ZR	4V 100U						
C209	ECUV1A224KBV	10V 0. 22U						
C210	ECUVNC104ZFY	16V 0. 1U						
C211	ECUVNC105ZFN	16V 1U						
C212	RCSTOJY335RE	6. 3V 3. 3U						
C213	ECUE1H222KBQ	50V 2200P						
C214	ECUE1C103KBQ	16V 0. 01U						
C215	ECUE1C104ZFQ	16V 0. 1U						
C216	ECUV0J105ZFY	6. 3V 1U						
C217	RCSTOGY475RE	4V 4. 7U						
C218	ECUV0J105ZFY	6. 3V 1U						
C219	ECUV1H472KBV	50V 4700P						

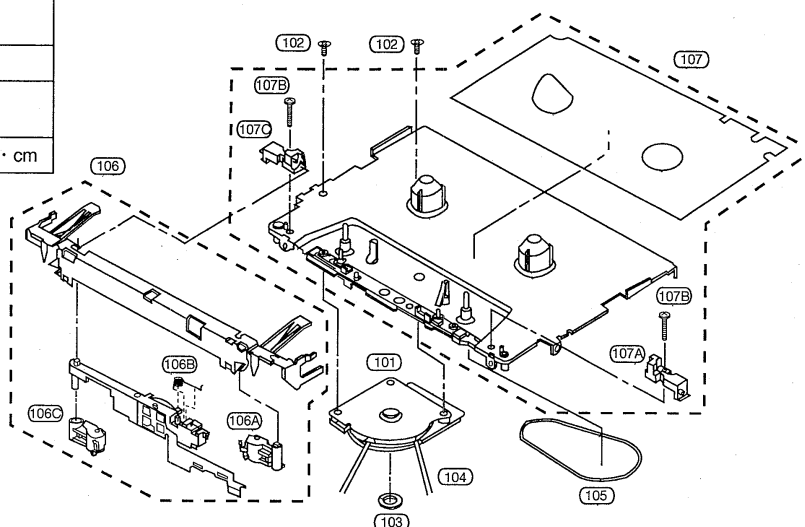
Cabinet Parts Location



Mechanism Parts Location

Item	FWD & REV mode
Wow and flutter	0.3 % (WRMS)
Pressure of pinch roller	110±10 g
Take-up tension	More than 60 g
Playback torque	20±5 g
FF/REW torque	More than 60 g · cm

The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No.



Replacement Parts List (Cabinet and Chassis / Mechanism)

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		22	RHQ0058-Y	SCREW	
1	RHQ0059-K	SCREW		23	FMA0986	LCD HOLDER	
2	RHQ0068-K	SCREW		24	RSQ0051	ZEBRA CONNECTOR	
3	RKK0100-K	BATTERY COVER		25	RHQ0060-N	SCREW	
4	FMR1018-H	JACK PIECE		26	RJH9208	CONNECTION TERMINAL (S1)	
5	RHQ0062-K	SCREW		27	RJC99027	R BATTERY TERMINAL (+)	
6	FMA0976	LINK ANGLE (R)		28	RJC99028	R BATTERY TERMINAL (-)	
7	RXM0059	LINK UNIT (L)		29	RJR0154-1	BATTERY SHAFT	
8	RGK0855-H	INTERMEDIATE ORNAMENT (A)		30	RHQ0013-1	SCREW	
9	RGK0856-H	INTERMEDIATE ORNAMENT (B)		31	RHE5101YA	SCREW	
10	RGK0857-H	INTERMEDIATE ORNAMENT (C)				MECHANISM	
11	RFKNQXS65V-K	OPEN KNOB ASS'Y		101	BFL26NB1BT	MOTOR	
12	RHE5119YA	SCREW		102	XQS14+A2FZ	SCREW	
13	RHQ0032-K	SCREW		103	RHW40002	WASHER	
14	FMA0997	INTERFACE LEVER		104	RDV0037	CAPSTAN BELT (1)	
15	FMB0442	AUTO RETURN SPRING		105	RDV0038	CAPSTAN BELT (2)	
16	RXQ0479	SHELL LOCK UNIT		106	RXQ0502	HEAD BLOCK ASS'Y	
17	XQN14+BG4FZ	SCREW		106A	RXL0130	PINCH ROLLER ARM (F)	
18	RYK0674A-K	CABINET ASS'Y		106B	RME0187-1	HEAD ARM SPRING	
18A	RGV0155-K	HOLD KNOB		106C	RXL0131	PINCH ROLLER ARM (R)	
18B	RGV0180-H	DOLBY/B. S/ST KNOB		107	RFKRQXS70F-K	MECHANISM BLOCK ASS'Y	
19	RFKLQXS70F-H	CASSETTE LID ASS'Y		107A	FMQ0547	HOLD PIECE (F)	
20	RKW0471-Q	LCD PANEL		107B	RHD14047	SCREW	
21	RHQ0022-S	SCREW		107C	FMQ0548	HOLD PIECE (R)	

Replacement Parts List (Electrical / Printed Circuit Boards Ass'y / Test Tape)

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		Q42	2SD2216STX	TRANSISTOR	
				Q43, 44	2SB1462STX	TRANSISTOR	
				Q45	2SD1328STXRA	TRANSISTOR	
IC1	AN7017SBE2	IC		Q46	2SA1745-7-TL	TRANSISTOR	
IC2	AN7379NSHE2	IC		Q47	UN9115TX	TRANSISTOR	
IC3	LB1674VILM	IC		Q48	DTA123JETL	TRANSISTOR	
IC4	AN7233SH-E2V	IC		Q50	UN9116TX	TRANSISTOR	
IC5	UPD17073B904	IC		Q51, 52	2SD2216STX	TRANSISTOR	
IC6	S29L130AFSTB	IC		Q53	2SK1067-4-TL	TRANSISTOR	
IC7	BA3630AKVE2	IC		Q54, 55	UN9210TX	TRANSISTOR	
IC8	M34211M4102G	IC		Q56	2SD2216STX	TRANSISTOR	
IC9	PST9123NR	IC		Q57	2SA1774STL	TRANSISTOR	
IC10	MM1305XW	IC		Q58	2SC4617STL	TRANSISTOR	
IC11	S8322D0JT2	IC		Q59	2SA1774STL	TRANSISTOR	
IC12	LA3235W-TFM	IC		Q60	UN9110TX	TRANSISTOR	
		TRANSISTOR(S)		Q61	UN9116TX	TRANSISTOR	
				Q62	2SD2216STX	TRANSISTOR	
Q1	UMS1TL	TRANSISTOR		Q63	UN9210TX	TRANSISTOR	
Q2, 3	XP1216TX	TRANSISTOR		Q64	2SD2436STXRA	TRANSISTOR	
Q4-7	2SK1839-TL	TRANSISTOR		Q65	2SB815B7TX	TRANSISTOR	
Q8, 9	2SD1820ASTX	TRANSISTOR		Q66	UN9210TX	TRANSISTOR	
Q10	2SD1820ASTX	TRANSISTOR		Q67	2SD1048X7TX	TRANSISTOR	
Q11	2SD2216STX	TRANSISTOR		Q68	2SB1295-6-TB	TRANSISTOR	
Q12	2SD1820ASTX	TRANSISTOR		Q69, 70	2SD2216STX	TRANSISTOR	
Q13	UN9210TX	TRANSISTOR		Q71-73	UN9110TX	TRANSISTOR	
Q14	2SD1048X7TX	TRANSISTOR		Q74	UN9210TX	TRANSISTOR	
Q15	UN9210TX	TRANSISTOR		Q83	UN9210TX	TRANSISTOR	
Q16	2SC4617STL	TRANSISTOR		Q84	2SD2216STX	TRANSISTOR	
Q17, 18	2SB1295-6-TB	TRANSISTOR		Q85	UN9215TX	TRANSISTOR	
Q19, 20	2SC3931CTX	TRANSISTOR		Q86, 87	2SD2216STX	TRANSISTOR	
Q21	UN9110TX	TRANSISTOR				DIODE(S)	
Q22	2SC3935TX	TRANSISTOR					
Q23	UN9214TX	TRANSISTOR		D1, 2	DAP222TL	DIODE	
Q24	UN9210TX	TRANSISTOR		D3	DA121TL	DIODE	
Q25	2SB1295-6-TB	TRANSISTOR		D4, 5	DAP222TL	DIODE	
Q26	UN9110TX	TRANSISTOR		D6, 7	DA121TL	DIODE	
Q27	UN9210TX	TRANSISTOR		D8, 9	RVDSVC203ATX	DIODE	
Q28	2SC3935TX	TRANSISTOR		D10	RVDSVC203ATX	DIODE	
Q29	2SA1745-7-TL	TRANSISTOR		D11	KV1560TR2-0	DIODE	
Q30	2SC3935TX	TRANSISTOR		D12, 13	MA729TX	DIODE	
Q31	2SB1295-6-TB	TRANSISTOR		D14	MA8120MTX	DIODE	
Q32	UN9111TX	TRANSISTOR		D15	MA729TX	DIODE	
Q33	2SC3931CTX	TRANSISTOR		D17	MA713TXRA	DIODE	
Q34	2SA1745-7-TL	TRANSISTOR		D20	MA729TX	DIODE	
Q35	2SC3931CTX	TRANSISTOR				VARIABLE RESISTOR(S)	
Q36	UN9210TX	TRANSISTOR					
Q37	2SD2436STXRA	TRANSISTOR		VR1	EVUTOVA05A54	V. R	
Q38	DTA115TETL	TRANSISTOR		VR2	RRN3A07B33WL	V. R	
Q39	2SK1067-4-TL	TRANSISTOR		VR3	EVMIYSX50B14	V. R	
Q40	UN9116TX	TRANSISTOR					
Q41	DTA123JETL	TRANSISTOR					

Ref. No.	Part No.	Part Name & Description	Remarks
		COMPONENT COMBINATION (S)	
Z1	RCRETC002-D	FM/TV B. P. F	
		COIL (S)	
L1	RL08U005T-M	COIL	
L5	RLQU470KT-W	COIL	
L6	RL04Z028T-W	COIL	
L7	RL04Z015T-W	COIL	
L8	RL04Z027T-W	COIL	
L9	RL04Z025T-W	COIL	
L10	RLV2N045-0	COIL (FERRITE ANT)	
L11	RL02U025T-M	COIL	
L12	RLBV601V-W	COIL	
L13	RLBN601V-W	COIL	
L14, 15	RLBV601V-W	COIL	
L16	RLQU331KT-W	COIL	
L17	RLBV601V-W	COIL	
L19	ELJSA101KF	COIL	
L20	RLQU101KT-W	COIL	
L21	RLQM2R2M-W	COIL	
L22	RL09U006-M	COIL	
L23	RLQU101KT-W	COIL	
L30	RLBV121V-W	COIL	
		FILTER(S)	
CF1, 2	RLFGEWNO4AL	FM IF FILTER	
CF3	RLFECFM3450A	AM FILTER	
CF4	RLFDGCO1AL	FM FILTER	
		L. C. D. (S)	
LCD1	RSL5164-C	L. C. D.	
		OSCILLATOR(S)	
X1	RSXC32K7L01T	OSCILLATOR	
X2	RSXC75K0L02T	OSCILLATOR	
		TRIMMER (S)	
CT1	RCVCFA20C01L	TRIMMER (FM RF)	
CT2	RCVCFA10C01L	TRIMMER (TV RF)	
		PHOTO COUPLER(S)	
P1	GP2S27T6	PHOTO COUPLER	
		SWITCH(ES)	

Ref. No.	Part No.	Part Name & Description	Remarks
S3-9	EVQPLMA15	SWITCH	
S10, 11	EVQPLMA15	SWITCH	
S12	RSH1B012-U	SWITCH	
S13	RSH1B013-U	SWITCH	
S14	RSS3A007-1A	SWITCH	
S15	RSS2A010-1A	SWITCH	
S16	RSS2A012-1A	SWITCH	
S17, 18	RSS2A010-1A	SWITCH	
		CONNECTOR(S) AND JACK(S)	
CN1	RJS2A1610T	CONNECTOR (10P)	
JK1	RJJ36TK03-C	HEADPHONES JACK	
JK2	RJJ33TR02-C	MIC JACK	
		CHIP TEST RING (S)	
R01, 02	EYF6CU	CHIP TEST RING	
		<PRINTED CIRCUIT BOARDS ASS'Y>	
PCB1	REP2404A	MAIN P. C. B. ASS'Y	(RTL)
		<GREASE OR JIG/TOOL>	
		TEST TAPE	
SA1	QZZCWAT	TAPE SPEED ADJ.	

- The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Replacement Parts List (Packing Material / Accessories)

Notes: * Important safety notice:
 Components identified by Δ mark have special characteristics important for safety.
 Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
 When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIAL		A3	RFA0617-H	DRY CELL BATTERY CASE	
				A3-1	RKK0071-H	DRY CELL BATTERY COVER	
P1	RPK0822	PACKING CASE		A4	RFA0733-K	DC-IN ADAPTOR	
P2	RPQ0575	PAD		A5	RFA0740-K	MIC STAND	
P3	RPQ0581-1	SPACER		A6	RFC0044-K	CARRYING BAG	
		ACCESSORIES		A7	RFEM301P	STEREO MICROPHONE	
				A8	RFEV003PFK1C	REMOTE CONTROLLER	
				A9	RFEV316P-K1S	STEREO EARPHONES	
A1	RQT3784-G	INSTRUCTION MANUAL		A9※	RKB205ZA-0	EAR PADS	
A2	RP-BP61SYS1	RECHARGEABLE BATTERY		A10	RP-BC155AEY	CHARGER	Δ
A2-1	RFA0475-Q	R. BATTERY CARRYING CASE		A11	RQCB0169	SERVICENTER LIST	

※This item is not attached merchandise, but it is supplied as a replacement part.

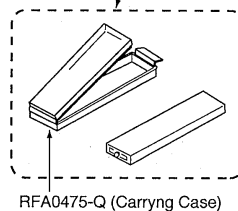
Supply of Rechargeable Battery as Replacement Parts

Please take note of the following points relating to Carrying Case to be used for protection of Rechargeable Battery from shorting.

Replacement Parts:

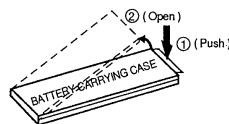
- Rechargeable Battery (RP-BP61SYS1) to be supplied will be provided with Carrying Case (RFA0475-Q).
- No replacement parts will be supplied for Rechargeable Battery without Carrying Case.
- Replacement parts will be supplied for Carrying Case (RFA0475-Q) without Rechargeable Battery.
- To your customers, delivery Rechargeable Battery together with Carrying Case to prevent shorting accidents that may occur when Rechargeable Battery is carried about without Carrying Case.

RP-BP61SYS1
 (Rechargeable Battery with
 Carrying Case)



Caution in Use of Rechargeable Battery

- Take Rechargeable Battery out of Carrying Case and use it.
- Be sure to carry Rechargeable Battery in this Carrying Case.
 If not, it may either heat or ignite by shorting with a metal.



Packaging

